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# East Europe Report

## ECONOMIC AND INDUSTRIAL AFFAIRS

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11 January 1984

**EAST EUROPE REPORT**  
**ECONOMIC AND INDUSTRIAL AFFAIRS**

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ENERGY SITUATION OF CEMA COUNTRIES REVIEWED

Budapest KULGAZDASAG in Hungarian No 10, Oct 83 pp 3-16

[Article by Balint Balkay, member of the Research Institute for World Economy: "The Energy Situation of the CEMA Countries--In a World Economy Interrelationship"]

[Text] Nowadays the world energy market is a reflection of the result of two effects. One is the economic depression that has plagued the capitalist world; the other, a longer-term effect, is the transformation of the energy markets. Both have contributed to the easing of tensions in the energy situation. Hence the standard scarcity in today's world economy is no longer energy but the availability of credits. The key role within the energetics of the CEMA continues to be played by the Soviet Union. It has cut back its oil production slightly as a result of the forced pace that had been triggered by the first, and in part by the second oil-price explosion. Hard-coal and nuclear-energy production have also failed to increase at the expected rate. There has been a strong increase, however, in the production of natural gas along with a simultaneous expansion in its consumer network. This appears to be a new feature in the allocation of Soviet industrial investments; for instead of setting up industry in Siberia, they have been taking the gas to industrial centers located west of the Urals. On the consumer side, the transformation of the energy structure and the reduction of energy intensity have not been enough so far to bring about the desired result either in the Soviet Union or in the small CEMA countries. Now these efforts will have to be continued under much more difficult economic conditions.

Development of World Economy Market Trends

The most expedient way for us to start reviewing the situation would be with the oil-price explosion of 1979; as a result of the Iraqi-Iranian war the producers (fob) price of oil, which in 1978 was still sold for the fob price of \$12.26 to \$14.17 per barrel, suddenly jumped to \$30 to \$37, and on the Rotterdam spot market to as high as \$44. The strengthening of the dollar has had the effect of a "third oil-price explosion," since most international oil transactions are quoted in dollars, despite essentially unchanged or slightly falling dollar oil prices, between 1980-1981 oil prices quoted in French francs, for example, had increased from 1,000

to 1,500 francs per ton. All of this has contributed to bringing the world economy to a halt: world trade which from 1979 to 1980 still showed a 21-percent increase, from 1980 to 1981 declined by one percent in dollar-terms (although when calculated in SDRs it did show some growth); among the reasons for this slack were a 5-percent reduction in the total volume of capitalist imports, a 9-percent decline in the total exports of the OPEC cartel and a 14-percent drop in total world oil trade. This trend also continued into 1982 virtually unchanged; during that year, according to figures published by the OECD center, there was no increase at all in the cartel's GDP, and the 2.5-percent growth that had been forecasted for 1983 is also unlikely.

Because of the difficulties involved in making these kinds of summaries we still do not have any data that would reflect the energy consumption of the world as a whole or that of certain world regions in terms of their combined use of all energy sources. What is already known, however, is that while the GNP of the world's seven largest capitalist economies (the United States, Canada, Japan, England, FRG, France and Italy) had grown by 2.3 percent in terms of real value between 1973 and 1981, their energy consumption had declined at an annual rate of 0.3 percent (and in the specific case of oil consumption by 1.5 percent a year).

Before becoming involved in a detailed analysis of various phenomena, let us point out the main factors that had led to this situation and had paved the way for the present trend of development.

--Since 1973 great efforts have been made virtually everywhere in the world (albeit with varying results) to limit energy consumption and energy imports. The capitalists have tried to eliminate energy-wasting equipment, processes and products; by implementing various tax and subsidy measures, the state has taken an increasingly stronger role in the regulating foreign trade; despite a whole line of protective measures (tax cuts, etc.), however, consumers have been little affected by all of this and the decline in real oil prices between 1976 and 1979 hardly provided a strong enough incentive for them to save energy. As a result of the steps that had been taken, however, by the time of the second oil-price explosion there was already an established system of institutions and measures in place--proven by subsequent developments to be both viable and effective--which could be immediately and successfully activated by the post-1979 increases in oil, and in general, energy prices.

--Due in part to the effects of the market, and in part to considerations aimed at ensuring uninterrupted supplies, there has been a considerable shift in the consumption structure of fuel types. Hard-coal production has stopped declining, the production of hydro-electricity and "other" energy sources has increased slightly, and especially in the developed capitalist countries there has been an increase in nuclear-energy and natural-gas production (the geographical distribution of natural gas reserves is more favorable from the point of view of the developed capitalist countries than the distribution of oil reserves.

--The above phenomena together with a reciprocal decline in economic activities have forced the OPEC cartel, which within the camp of oil producers has been the most strongly committed to the maintenance of oil-price levels, to take a defensive position; in the coal and nuclear-energy markets producers continue to compete for buyers and the market for natural gas has considerably weakened.

All of these factors combined have contributed to the creation of a global financial crisis in which the standard scarcity is not a shortage of energy but a shortage of credits.

Let us now examine all of this in more detail according to the various energy forms.

### Oil

According to Table 1, while production levels during the first half of 1982 barely exceeded the level for the year, they had undergone a large-scale redistribution: compared to both 1982 and 1980, every group of countries has increased its share of the world production.

Table 1

Changes in the Oil Production of the Main World Regions and in Their Share of the World Production

	Oil Production (million tons)			Percentage Change		Share of World Production (%)		
	1972	1980	1982*	1980 1982	1982* 1980	1972	1980	1982*
1. CEMA+Al- bania+Yu- goslavia	422.6	625.6	628.9	+48.0	+0.5	16.2	20.4	23.5
2. China	30.0	106.0	101.5	+253.3	-4.2	1.2	3.5	3.8
3. OPEC countries	1531.1	1340.8	907.7	-0.8	-32.3	51.9	43.7	33.9
4. Develop- ing world without OPEC	153.8	290.9	354.8	+88.6	+22.3	5.9	9.5	13.2
5. Developed capitalist world (Western Europe)	646.7	703.2	682.7	+8.7	-2.9	24.8	22.9	23.5
Total	2604.2	3065.6	2675.6	+17.7	-12.7	100.0	100.0	100.0

\*Data gathered for the first six months projected for the whole year.

Source: Own calculations prepared on the basis of various figures obtained from the PETROLEUM ECONOMIST

(not considering the slight drop that occurred in the capitalist countries between 1980 and 1982) except the OPEC cartel which has fallen spectacularly from a share of 50 percent to 44, and later to 34 percent.

The greatest increase between 1980 and the first half of 1982 occurred in the following countries: the Philippines, 215.5 percent, Denmark, 154.2 percent, New Zealand, 43.7 percent (only in gas condensation), the Congo, 39.1 percent, Iraq, 30.6 percent, Bolivia, 30.4 percent--at the same time world production as a whole declined by 8.2 percent.

Another important factor has been a renewed increase in newly explored oil reserves and in their ratio of annual production. If we divide the exploration results by the annual level we get an average.

Table 2

Changes in the Natural-Gas Production of the Main World Regions and in Their Share of World Production

	Gas Production (billion m <sup>3</sup> )			Percentage Change		Share of World Production (%)		
	1974	1979	1981	1979	1981	1974	1979	1981
				1974	1979			
1. CEMA+Albania+Yugoslavia	307	460	522	+49.8	+13.4	23.4	30.9	33.5
2. China	23	15	19	-37.0	+27.0	1.8	1.0	1.2
3. OPEC countries	67	106	84	+58.2	-20.8	5.1	7.2	5.4
4. Developing world without OPEC	67	75	102	+11.9	+36.4	5.1	5.0	6.6
5. Developed capitalist world (U.S.) (Western Europe)	845 (611)	833 (588)	831 (555)	-1.5 (-8.5)	-0.2 (-0.6)	64.6 (46.6)	55.9 (37.5)	53.3 (35.6)
Total	1309	1489	1558	+13.8	+4.6	100.0	100.0	100.0

Note: These data pertain to net production and therefore do not include torched gas or other losses, or the on-site use of gas-producing plants.

Source: Own calculations prepared on the basis of various figures obtained from the PETROLEUM ECONOMIST

Figure of 2.96 for the period between 1950-1969, 0.29 for 1976, 1.11 for 1977, 0.81 for 1978, 1 for 1979, 1.31 for 1980 and 2.09 for 1981. (IEA World Energy Outlook, OECD, Paris, 1982).

As a result of today's lower prices and due to a perception on the part of producers that marketing prospects have become less favorable, already there has been a decline in interest toward exploration projects that promise the least lucrative returns: in the United States the number of drilling equipment used for oil drilling has dropped from its 28 December 1981 all time high level (4,500 units of equipment) to 2,500, and what in the longer run is even more revealing, the number of on-site geophysical exploration teams has shown its greatest drop since these statistics were first gathered (in 1932). All of this proves that the most expensive exploration projects that were undertaken right after 1979 were in rough balance with the high oil prices of that time, and that in view of today's weak prices and sluggish demand new explorations will be cut back considerably. For this very reason, it is not unlikely that in the long run (in the next 5 to 10 years) the OPEC price (\$34 per barrel) will be maintained in terms of real value, although strong fluctuations may be expected around this trend.

#### Natural Gas

The development of natural-gas production is shown in Table 2. OPEC's percentage share, which in natural gas was low to begin with, has dropped almost to its 1974 level (even though its production has increased by 25 percent). The share of the developed capitalist world has declined slightly; in absolute terms its production has remained virtually unchanged.

The most important development has been the fact that world reserves of natural gas, which between 1970 and 1979 had almost doubled already, have increased by another 25 percent. Especially significant has been the growth in Soviet reserves: since 1970 they have increased 3.7-fold.

During the period of sharp increases in oil prices in 1980 and later in 1981, exporters of natural gas had tried to raise the fob price of natural gas to the level charged for a calorie-equivalent unit of oil; in other words they had intended to raise the price of natural gas per 10,000 kcal of heating value (roughly 1 m<sup>3</sup>) from its 4 to 11 cent level of around 1978 to somewhere between 24 to 28 cents. From among its large users only Japan which has been highly dependent on imported natural gas did not resist this attempt. Since then the natural gas market, like the oil market, has become stagnant: France has signed an agreement with Algeria for 17.8 cents instead of the originally requested price of 24 cents (although to this the French government has added another 2.4 cents in "subsidies"); hence, shipped to France and there regassified, Algerian gas will cost almost 24 cents. On the other hand, according to the Western press shipping Urengoy gas to France would only cost 19.5 cents. (PETROLEUM ECONOMIST, March 1982, p 105).

According to figures published by the International Energy Agency (Natural Gas: Prospects to 2000), the price of delivered (in the case of liquid gas regassified) natural gas in the OECD group cannot be higher than 16.5 cents if the producers want to increase the share of natural

gas in the energy market (i.e., its percentage ratio among fuels); at a price of 17 cents it would only be possible to maintain the existing percentage ratio, while at 18.3 cents the absolute level of gas consumption would remain at its present level (in other words, its percentage ratio would gradually decline). Depending on the mode of gas shipment (pipeline, liquification) and on the geographical distance this would be the equivalent of a fob price of 9 to 10 cents. Confirming the reality of these figures is the fact that--after long discussions--U.S. importers of natural gas have recently agreed with Sonatrach of Algeria on a fob price of 15 cents, and according to reports, Italy will pay a similar fob price for Algerian gas to be received by way of pipeline through the Messina Strait. (These prices are usually indexed according to the basket price of several light oil varieties).

From the above we can draw three main conclusions. 1. The selling of natural gas at cif oil parity has proven to be unrealistic, not to mention selling it at fob oil parity. The price of natural gas is expected to continue to lag behind the price of a calorie-equivalent unit of oil also in the extended and long run. 2. Producers will be able to increase their profits by selling greater quantities at cheaper prices, especially if they can salvage and sell the gas that until now has been given up for torching. 3. Providing the great gas-consuming regions with increased gas supplies is not expected to encounter any obstacles. (We should remind you that of its 310 billion m<sup>3</sup> gross annual production in 1979, OPEC only exported 36.5 percent or 113 billion m<sup>3</sup>; 55 billion m<sup>3</sup> were torched or lost due to other factors).

#### Coal

From 1972 to 1981 the world production of black coal had increased by 27 percent, brown-coal and lignite production by 21 percent, crude-oil production by only 9 percent, while natural-gas production had jumped 35 percent. (Between 1975 and 1981 the production of these two types of coal had risen by 17 percent and 14 percent, respectively, oil production had gone up 5 percent while natural-gas production had increased by 26 percent).

Between 1974 and 1980 the world reserve of all coal varieties had increased from 470 billion to 663 billion tons in equivalent hard-coal value, and the statistical life span of these reserves (reserves divided by the newest factual data for the year) had increased from 189 to 239 years.

Following the second oil-price explosion, between 1979 and 1981 world-market coal prices had risen considerably--for example, the price of high energy coal shipped to Western European ports had increased to one-and-a-half to two-times its original level. Only since 1981 have coal prices begun to drop again as a result of declining oil prices.

In spite of all this, the international trade of various coal types had only risen from 200 million tons in 1975 to 260 million tons in 1980; this had also included a slight increase in the ratio of high energy coals

(from about 20 percent to 35 percent). Consequently, despite the price increases--which have been more of a reflection of increasing production, handling and shipping costs--the coal market today continues to be a buyers' market where American, Australian, Canadian--and for those who are willing to buy it--South African coal are in competition with each other. The gap that was created as a result of a decline in Polish coal production has been filled so fast that recent Polish export attempts have found themselves virtually without a market. The American coal lobby has had a lot to do with President Reagan's decision to speak out against the Urengoy gas deal. As far as the future is concerned, therefore, we can expect a return to the pre-1979 price ratio as the standard between oil and coal. Coking coal and the various coke types will continue, possibly even more markedly than before, to be treated separately and they may even show a slight increase in real price.

#### Nuclear Energy

The situation here is best characterized by the fact that while in 1970 the OECD group's 1985 network-connected nuclear power plant capacity had been projected to reach 563 GWs, in 1978 that estimate was lowered to only 214 GWs. The value estimates that were made between these two dates showed a monotone decline. This trend, however, was reversed again by the second oil-price explosion, even if only to a lesser extent: the OECD center's latest prognosis for 1985 is 216 to 225 GWs. (The factual figure for 1980 was 119 GWs.)

For information regarding the present status of competition among the various fuel types we can consult the IEA's latest figures. According to these, all rational estimates indicate that in the case of new constructions an oil-fueled power plant (numerically speaking 2X600 MWs) will generate more expensive electricity than either a 2X1100 MW PWR-type nuclear power plant, or a 2X600 MW coal-fueled power plant operating on the waste-gas desulphurization principle. Making a choice between the latter two is not a clear-cut decision. Assuming that there is a 10-percent discount interest rate and the construction is proceeding at a stepped-up pace (in other words, that the construction of a nuclear power plant takes 6 years and that the building of a coal-fueled plant takes 4), the electricity generated by a coal-fueled power plant is cheaper in the United States but more expensive in Western Europe and Japan. As a result of the greater capital expenditures involved in building a nuclear power plant, in the case of a 15-percent discount interest rate or if construction of the nuclear power plant is drawn out for 10 years the coal-fueled plant's electricity becomes cheaper in all three places.

Aside from its presently highly restrained pace, nuclear power-plant construction is hindered neither by a lack of uranium reserves or uranium mining, nor by limited enrichment-plant or even power-plant construction capacities. In my opinion, therefore, the OECD center's estimate forecasting a possible 7.5-percent annual increase in the member countries' nuclear capacity by the year 2000 may be considered realistic.

## Non-Conventional Energy Sources and Energy Forms

Overall it could be said that non-conventional sources and forms of energy--some exceptional uses notwithstanding--have not even been able to compete with \$40 oil or with other subsequently driven-up fuel and energy prices. It appears, furthermore, that the main motivation behind experimenting with them has been not so much a desire to find alternatives to conventional fuel forms but a hope to take advantage of generous government subsidies. Today, as a result of a combination of weak oil prices and government disappointments (especially in the U.S.), these experiments have been cut back severely. Those versions, however, which promise better returns are expected to be carried on by private enterprise without outside assistance, using a marketing policy that will be more aggressive than before. Hence on the 1985-1990 time horizon these non-conventional sources of energy may effectively curtail (possible) future price increases among the conventional fuel forms.

## Conclusions

Nowadays the energy market is a reflection of the result of two effects. One is the economic depression that has plagued the capitalist world; the other, a longer-term effect is the structural transformation of the energy markets. Both effects point to a decline in energy prices. According to estimates, the present stagnation in the energy markets is due about 70 percent to the first and only about 30 percent to the second effect.

In the specific case of the oil market, the OECD group's demand in 1980 declined by 5.5 percent and in 1981 by another 4.5 percent. The OPEC cartel's share of world production has dropped from 52 percent in 1972 to 34 percent in 1982, and the group's unity has slightly weakened. As a result of increased expenditures for exploration the world's explored oil reserves have begun to grow. Last but not least, the consumption of both coal and natural gas--especially of the latter--has increased more rapidly than the use of oil. Hence, although the decline in the OECD group's consumption of oil will probably end in 1983, we do not have to expect any significant oil-price increases until 1985.

Natural gas prices will remain 20 to 30 percent or perhaps even more below energy-equivalent oil prices, while coal prices which are presently high are expected to drop: the price parity between oil and coal which existed in 1978 will be reestablished.

Nuclear power-plant construction in the OECD will pick up slightly.

After a temporary setback, the cause of non-conventional forms of fuel and energy will gain new momentum, this time under more competitive conditions. By between 1985 and 1990 these energy forms may effectively contribute to keeping the price of conventional fuels low.

Within the OECD group, North America's dependence on fuel imports will decrease, Western Europe's will ease and Japan's will remain unchanged.

The rapidly spreading problem of insolvency in the developing world will curtail the fuel demand of these countries (within 5 to 10 years in the case of the poorer, and within 2 to 3 years in the case of the relatively wealthier countries).

#### An Assessment of CEMA's Energy Situation, Development of the 1970s and the Present Situation.

In examining the CEMA from the point of view of energy we will divide it into two parts. One will be the energy superpower Soviet Union; the other will be the group of small European CEMA countries. The energy situation of the latter does not differ much from that of the Western European countries.

##### The Soviet Situation

As is well known, the Soviet Union possesses 30 to 40 percent of the world reserves of every type of mineral fuel (except for uranium for which we have no data). It is also well known, that the European big-consumer part of the Soviet Union is not nearly self-sufficient when it comes to energy; its local (regional) energy reserves are insufficient and are heading for depletion. In this respect, therefore, the European part of the Soviet Union is much like the small CEMA countries. Ensuring adequate energy supplies to the European countries of the CEMA (including also the European part of the Soviet Union) will require the exploration of new fuel deposits in areas beyond the Urals as well as the construction of proper channels of transportation.

It is less widely known, that this objective had been defined already before the first oil-price explosion of 1973 as a result of tensions in the production and transportation of energy that had already begun to make themselves felt. The situation was further complicated by the oil-price explosion which by pushing up the value of Soviet oil in international and to a lesser extent in intra-CEMA transactions has provided a very strong incentive for increasing production and for replacing it in domestic production with other types of fuel. As a result of all this, since 1970 the energy sector has been receiving increasingly stepped-up plans which, however, it has been constantly late in fulfilling; this has necessitated yet another revision of Soviet energy policies.

In the following discussion we will examine these developments in detail, by looking at each type of energy separately.

##### Oil

One of the internationally significant events of the 1970s was the exploration of the Western Siberian Tyumen region, including the Samotlor supergiant field.<sup>1</sup> Registering an almost tenfold increase between 1970

and 1980, its output has increased from about 8 percent of total Soviet production to more than half. (Total Soviet production in 1970 was 353 million tons and by 1980 it reached 603 million tons). Although compared to previous five-year plan periods the pace has eased off, the absolute growth of Soviet oil production has exceeded all previous levels: it reached its peak between 1974 and 1975 with an output of 31.9 million tons (between 1978 and 1979, however, it only reached 14.6 million tons, and as it is well known, from 1980 to 1981 it only reached 6 million tons). All of this happened during a period when domestic and CEMA demand for Soviet oil was on the rise and when there was nothing that would have prevented the selling of greater volumes of Soviet oil and products on the capitalist markets; at the same time it was also a period when almost 60 percent of the Soviet Union's dollar-cleared export revenues came from hydrocarbon exports.

In attempting to account for this phenomenon the media, especially the Western press has published many unprofessional explanations. Even without any special information at our disposal we can safely assume without the risk of being wrong that the present problems are the results of forced production at precisely the richest Soviet oil deposit sites, more specifically and most importantly at Samotlor. Samotlor ranks only tenth among the supergiants, however from the point of view of production it is surpassed only by Ghawar of Saudi Arabia which contains five times its initial reserves. In order to maintain the production level both of that site and that of the other supergiant, Fyodorovsk fields, they have been planning to introduce secondary gas-extracting production techniques which, however, still have not been implemented either in the above fields or elsewhere.<sup>2</sup> In the meantime, compared to 1975 the output of the average Western Siberian oil pump has dropped to almost half, and during the 1981-1985 plan period it is expected to be cut in half again. The problem is not that the Soviet fields do not have enough oil: "given our potential reserves...the extent to which they can be put into industrial production depends solely on the volume of resources that is made available for research"--wrote academician L. Malentiev and A. Makarov in the April 1980 issue of PLANOVYE KHOZYAYSTVO (Perspektivnoe razvystie toplivo-energeticheskovo kompleksa, p 87). The problem is that the resource requirements of a consistent, and in the long run profitable production many times exceed the resources that were needed in the 1970s to begin rapid production aimed primarily at minimizing short-term costs and maximizing long-term revenues: "from the end of the 1950s until most recently the realization of a ton of conventional fuel surplus capacity has required an investment of 200 rubles in the case of coal, 30 to 40 rubles in the case of natural gas and 20 to 30 rubles in the case of oil--wrote Malentiev and Makarov--however the production costs of gas and oil have increased several-fold compared to the past 20 years." To avoid any misunderstandings it should be pointed out that in terms of natural units these research and exploration costs do not make Soviet oil especially expensive compared to the international standard; on the contrary, compared to the international standard that has been in effect so far it is quite inexpensive. After all it has been only in the past few years that Siberian research costs have begun to soar.

Table 3

Changes in the Soviet Fuel Structure  
(data in percentages)

	<u>Oil</u>	<u>Natural Gas</u>	<u>Nuclear, Hydro</u>	<u>Coal</u>	<u>Others</u>
1980	44	26	4	24	2
1985	39	32	6	21	2

Note: The planned total annual production of conventional fuels for 1985 is 2.3 billion tons--oil 630 million tons, coal 775 million tons and natural gas 630 billion m<sup>3</sup>.

Source: EKONOMICHESKAYA GAZETA, 1982/2

In light of the above it seems only natural that by making a strong shift in emphasis in its 1981-1985 five-year plan the Soviet economic leadership has named natural gas to be the standard-bearer for its fuel-energy complex, and has called for virtually no increase in oil production.

## Natural Gas

The most far-reaching undertaking of the 1981-1985 plan period will be the opening of the Urengoy gas field for production and the exploration of the Yamburg-Yamali fields located north of it. These are expected to be perhaps even greater supergiants than the Samotlor, Fyodorovsk or the earlier explored Romaskino fields. Of the Soviet Union's 34 trillion m<sup>3</sup> of explored gas reserves, which is by far the richest in the world (Iran's reserves occupying second place only amount to 10 trillion m<sup>3</sup>), 27 trillion m<sup>3</sup> are located in the Western Siberian region.<sup>3</sup> The five year plan which is presently in effect has called for the construction of altogether 20,000 km of 1,440 mm diameter "Orenburg" pipelines, including the well-known Urengoy-Uzhgorod export line. By 2 April 1982 they finished 7,068 km of it, including two complete pipelines: the Urengoy-Uhta-Griazovetz and the Urengoy-Petrovsk line. Of the three additional domestic pipelines planned one will lead to Novopskov, another to the "Moscow-circle" and the third through Minsk to Uzhgorod (this is not the same export pipeline that runs from Moscow to Kiev). The program as a whole is collectively called the Western Siberia Centrum.<sup>4</sup> As the designation indicates: the goal is to take fuel to the industry and not to set up industry near the fuel as it had been suggested earlier.

The problem behind this vast undertaking is that under the pressure of having to maintain a forced pace, the Urengoy site will face the use of the same cost-minimizing production tactics that had been applied at Samotlor and Fyodorovsk. "Of the 123 drillings planned for last year only 93 have been completed (at Urngoy) and only 61 of these have been finalized. Of the 137 km long central pipeline which was supposed to

connect 33 drill holes only a 52 km long section, connecting 16 drill holes has been completed...of the four complex gas-treatment stations called for in the plan only two have been put into operation. What kind of reserves can make it possible--ask PRAVDA's energy-specialist correspondents V. Lycin and V. Parfenov--for the producing enterprise to still fulfill the plan?...to put it simply, by opening the tap on the drill holes wider. One does not have to be an expert to understand that in the long run the prolonged continuation of forced production from a limited number of drill holes...may shorten the stable production life of the layers.<sup>5</sup> The authors also ask another important question: "What is the way out?" And their answer: "The way out is through the modernization of the economic mechanism."

Despite the above expressed critical comments I am convinced: the possibilities of the Urengoy and the other huge Western Siberian gas sites are so enormous that during the next couple of five-year plan periods they will undoubtedly be able, even if at a loss, to circumvent the energy-bottle neck that has plagued the Soviet Union and the CEMA countries.

#### Coal

The new plans that are projected to be built in the Soviet central zone under the new five-year plans will become parts of a system of interrelationships that includes obsolete and long ready-to-be-phased out plants and an antiquated and inefficient infrastructure. It is not by accident that the problems, inasmuch as they can be referred to as such, which Soviet industry has experienced in fulfilling its plans have been found mainly in the traditional branches of industry and have been due primarily to old production capacities. One such branch is coal mining.

In 1981 the production cost of coal exceeded its wholesale price by 7 percent in Karaganda, 8 percent in Kuzbas (in the case of coking coal by 1 percent), 22 percent in Chelyabinsk, 30 percent in Donbas (for coking coal) and by more than 35 percent in the Moscow-basin which in part is a price-system related problem, but which is also a good indication of the unfavorable situation of the old mining regions. Granted that the great depths and other geological and deposit content-related problems have seriously hindered production in the old regions, but this does not explain why the reconstruction of some mining works still have not been completed after 17 years.<sup>7</sup> Looking back at it, all of this seems to confirm the strong intention expressed by the Soviet economic leadership in the 1960s to reorient as much of Soviet industry as possible to using hydrocarbons, more specifically to petroleum and heating oil. It is this campaign which has been put in jeopardy as a result of the disappointing development of oil production. In light of all this, the forcing of coal production plans--despite their repeated failure--must be attributed to the important struggle that is being waged to make up for the losses that have been caused by lagging oil production.

Table 4

Data on Soviet Coal Mining  
(in million tons)

<u>Year</u>	<u>Plan</u>	<u>Modified Plan</u>	<u>Fact</u>
1976	715		711
1977	733		722
1978	750	746	724
1979	757	752	719
1980	805	745	716
1981	738	718 (?)	704

(For the source see, for example, the various issues of UNECE Economic Survey of Europe).

As it is, we might say, well known, the Siberian and Far Eastern regions contain virtually inexhaustible deposits of coal and its exploration has, in part, already begun. The problem here lies in the capacity of the Siberian railroads which were not designed to support such an undertaking and which are badly needed for other purposes. Hence the utility of the eastern fields is discussed mostly in terms of being a source of supply for the Soviet Far East and for possible Japanese exports. The situation is different in the case of the Ekibastus and Kansk-Achinsk fields which soon will significantly contribute to the Soviet energy balance, although not in the form of coal but by providing electricity. I do not intend here to discuss the details that have already been reported in the press, but I will present an important chart from the above-quoted work by Malentiev and Makarov, which provides evidence that Soviet energy experts and economists also do not believe that coal is necessarily more expensive than nuclear energy.

Table 5

Characteristics of Various Types of Power Plants  
(electricity cost: kopek/kWh)

<u>Fuel:</u>	<u>nuclear</u>	<u>Ekibastus</u>	<u>Kansk-Achinsk</u>	<u>Kuznietzk</u>
		<u>coal</u>	<u>coal</u>	<u>coal</u>
Location of the Power Plant:	consumer region	by the mine	by the mine	consumer region
Transmission:	standard	direct current voltage	ultra-high voltage transmission line	standard

Table 5 continued on following page

Table 5

<u>Fuel:</u>	<u>nuclear</u>	<u>Ekibastus</u> <u>coal</u>	<u>Kansk-Achinsk</u> <u>coal</u>	<u>Kuznietzk</u> <u>coal</u>
Consumer district				
Central district	1.3-1.5	6.95-1.10	1.15-1.25	1.55
Ural	1.35-1.55			1.20
Siberia	1.45-1.65		0.65-0.75	
Kazakhstan		0.55-0.65		

Source: Malentiev and Makarov: Perspektivnoe razvystie toplivo-energeticheskovo kompleksa. Ibid.

#### Nuclear Energy

As it is also evident from the data presented in Table 3, that in the Soviet Union, as elsewhere, there has been less emphasis on nuclear-energy development than before. According to the data available to me, of the 19 GW capacity that had been planned for 1980 only 13.7 was actually realized; subsequent plans have also been scaled down as follows: original expectations: 1985: 33 to 35 GW; 1990: 70 to 81 GW; 2000: 150 to 200 GW; present expectations: 1985: 24 to 25 GW; 1990: 45 to 63 GW; 200: 100 to 150 GWS.

In addition to the profitability-related qualifications shown in Table 5, the development of nuclear energy has also been hindered by delays in the construction of the Volgodonsk Atommas factory. Already during the present five-year plan the plant is expected to furnish nuclear (i.e. non-electronic) components for 7 power plants of 1,000 MW capacity each, yet so far only about half of the factory's capital construction has been completed. With tremendous effort the workers have begun to work on the first units in a factory which is still under construction, and they expect to complete the first one by the end of 1983. By 1985 they expect to be able to deliver all seven units, and perhaps even an eighth one! Otherwise the factory will produce four units per year at full capacity. It is possible, therefore, that in addition to the Hmelnitzkiy units that are being constructed at a different location (of which the first is expected to begin generating electricity in 1984), the first unit of the Konstantinovka plant supplying the 750 kV Romanian-Bulgarian line will also join production by the end of this plan period.<sup>8</sup>

#### General Observations

Looking at it from the point of view of the Soviet domestic economy it is important for us to realize that the demands of the energy sector are rapidly rising not only with respect to investment resources (which have tied down 40 percent of all industrial investments), but also to the

material products of the economy.<sup>9</sup> Hence the delays and the lack of coordination that may be expected in the other branches of industry will also affect energy production. Recently the greatest increase in the demands of the energy sector has been for quality materials, machines and equipment. In order to satisfy these demands new factories must be built and increased efforts must be made to construct pipelines, roads, housing settlements and infrastructure-related public projects. In other words: the development of the energy sector, especially of its standard-bearer, the gas sector, is highly extensive even today--and in those sectors where intensification would be the next step to be taken, production growth cannot keep up with the demand.

Within the bounds of possibility the export commitments of the Soviet Union have always enjoyed special attention and this is expected to continue in the future. This holds true both for intra-CEMA contractual deliveries and for capitalist exports which have become increasingly important for the Soviet economy. The question is, what are the possibilities? In my opinion the above discussion has made the technical limitations quite clear. In summary, we cannot count on increasing exports of oil and petroleum products or of coal and especially quality coal; in fact, in the case of fuels of superior heating value exports are expected to dwindle. Consequently, the 20 percent energy-export surplus which CEMA has been promised to receive during the 1981-1985 plan period will have to be limited to natural gas and electricity. In addition, the CEMA countries can also expect to receive heating-element supplies for their nuclear power plants that are about to commence operation.

The problem of non-technical limitations is a separate question. Oil and petroleum-product exports which have declined in quality and which presently is moving in an unfavorable direction, capitalist natural-gas and electricity exports which for various reasons cannot be expanded, and the by now traditional grain imports may cause tensions in the Soviet foreign-trade balance which the Soviet Union must find ways to counter-balance. It is within this relationship that we must consider the by now generally accepted view according to which the conditions for future shipments of Soviet fuel and energy to the small CEMA countries will continue to become more severe within the next few years.

#### The Small CEMA Countries

Since at this time of Polish and Romanian production-payment difficulties the supply side of the CEMA countries' energy sector consists virtually exclusively of shipments from the Soviet energy sector, in the following chapter we will focus on the supply and demand side of the question.

According to A. Zubkov's estimates,<sup>10</sup> in the 1970s the energy intensity of the national income of the European CEMA countries had dropped at an annual rate of 1.2 to 1.3 percent while their energy needs had risen by almost 4 percent a year. Almost 25 percent of their economic growth was directly attributable to a drop in the energy intensity of their national income and 75 percent to increased fuel and energy consumption.

According to Zubkob, by the end of the 1981-1985 plan period the first value will have increased to 30 to 40 percent, while the second will have dropped accordingly to 70 to 60 percent. During the 1980s the energy intensity of the national income may, that is to say is expected to decline by 1.5 percent, and in the case of the GDR and Czechoslovakia by even more. In other words: if in the 1970s a 1-percent increase in the national income was accompanied by a 0.8 percent increase in consumption in terms of primary forms of energy, in the 1980s, according to Zubkov's prognosis, this latter figure may decline to 0.7 percent. Consequently, if between 1981-1985 the average rate of growth in the national income of the European CEMA countries is maintained at 4 percent a year, than primary energy consumption will increase by 2.8 percent.

As a basis of comparison: the real GDP of the OECD group, according to figures published by the OECD secretariat and the IEA,<sup>11</sup> had increased by 19 percent between 1973 and 1980. Although its total primary energy consumption had risen by 4 percent, its oil consumption and net oil imports had declined by 3 and 14 percent, respectively. During these seven years the primary energy intensity of the GDP had increased by 13 percent, or by 16 percent if we take the eight-year period including 1981, while its oil intensity had improved by 20 and 26 percent, respectively.

Comparing the above with A. Zubkov's figures and with the data available in various issues of UN ECE Economic Survey of Europe, we find that between 1973 and 1980 the energy intensity of the European CEMA countries, including the Soviet Union, had remained about constant in terms of their national income expressed in current prices. Most of the improvement referred to by A. Zubkov had occurred between 1970 and 1973. For even between 1979-1980 the situation continued to deteriorate: the increment of growth in the national income expressed in current prices was 5.7 percent in 1976, 4.8 percent in 1977-1978 and 2.8 percent in 1979-1980 (in this last case not including Poland). Energy consumption in 1976 was up by 4.1 percent and in 1979-1980 by 3.2 percent (this last figure is based on preliminary estimates). The ratio between the two amounts to 0.76 for 1976, 0.85 for 1977-1978 and 1.14 for 1979-1980.

If we were to compute national income in terms of real rather than current prices, this would further worsen the picture. All things considered, therefore, it could be said that on the whole the efforts that had been taken by the European CEMA countries until 1980 in order to reduce their energy intensity have not brought satisfactory results. And since in today's difficult economic situation the scarcity of energy supplies and the dwindling of effective demand for energy are objective givens, as a result of the pressures caused by these difficulties adjusting to this situation from now on will have to be done under worsening conditions.

In view of these financial difficulties and of the continuing decline in effective energy demand it would be unrealistic to expect that CEMA's energy-importing countries will be able to make up for the fuel and energy which they cannot obtain cheaply within the CEMA by buying mass quantities of them in the capitalist world markets.

### Summarizing Thoughts

Within the next 10 years great but profitable efforts will significantly increase the role of Western Siberian gas in the energy structure of the Soviet Union. There will also be an increase, although under less profitable conditions and at a slower rate than had been hoped, in the importance of nuclear energy. For all practical purposes, oil production will stagnate despite costly investments. The plans call for an increase in coal production, although its projected rate of growth will not be sufficient to maintain coal's present percentage ratio. The experiences of the past five years should serve as a warning regarding the feasibility of such plans.

The Soviet Union cannot go without the revenues it earns from its capitalist fuel exports. Since oil-export possibilities and oil and product prices have been declining, and since the West has not shown any tangible interest toward the idea of electricity exports, the focus of exporting efforts will shift to natural gas--this is confirmed by today's developments. The abundance of Soviet gas, however, is so great that even if there were to be a significant increase in shipments to Western Europe and in the gas ratio of domestic consumption, there would still be no reason to be concerned that there may not be enough left to satisfy the relatively sizable gas demand of the small European CEMA countries.

As a result of the joint CEMA investment in the construction of the Hmelnitzkiy and Knstantinovka nuclear power plants it will be possible to increase electricity supplies to some degree in a manner which is more or less consistent with the slowed rate of economic growth in these countries. The 20-percent growth in CEMA-targeted fuel and energy shipments for 1981-1985 will have to be limited to gas, and to a lesser extent to electricity. This may lead to the intensification of existing gas pipelines, by equipping them with additional compressors.

Deliveries of equipment and heating elements for the construction of nuclear power plants in the small CEMA countries will, in my opinion, also be slightly delayed, although this will not exceed the slow-down in these countries' rate of economic growth: in this area across-the-board shortages are more likely to be the results of incomplete deliveries by the smaller CEMA partners.

Maintaining the present level of oil and product shipments is expected to become more difficult and the conditions under which it is done will become more severe.

Looking at CEMA as a whole (and especially the small CEMA countries) it appears that so far the transformation of the energy structure and the reduction of energy intensity have not brought the desired results. These efforts will have to be continued under the incomparably more difficult conditions of the present situation.\*

#### FOOTNOTES

1. This is not a journalistic term: the word supergiant is used to describe fields which contain initial reserves of over 5 billion barrels.
2. Nyeftnaya promyshlennoc' na novom etape--statement made by N. A. Maltzev, Minister of Oil Industry in EKONOMICHESKAYA GAZETA, 1982, No 5.
3. V. Lycin, V. Parfenov: Energia tyumenskovo severa, PRAVDA 4 May, p 2; 7 May, p 2.
4. Marsh velikoy stroyki pyatiletki. IZVESTIYA, 3 April 1982, p 2.
5. Mineral'nye resursy i tzeny (V. Cheplanov and J. Chernegov, EKONOMICHESKAYA GAZETA 1981 No 46, p 10.
6. (missing)
7. PRAVDA editorial: Bystreye stroit' shakhty!
8. I stroit' i osvaivat', SOTZIALISTICHESKAYA INDUSTRIYA 17 Dec 1981.
9. Not to mention capitalist imports (used occasionally for fire-fighting purposes).
10. Toplivo energeticheskovo problema v stranakh SEV, Voprosy Economiki 1981 No 10, p 93.
11. IEA world Energy Outlook, OECD Paris, 1982. Figures pertain to the entire period between 1973-1980 (therefore they are not ratios any given year).

\* Author's note: although the manuscript was completed in November 1982, the events that have occurred since then have not changed the basic message of this paper.

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BULGARIA

ROUNDTABLE DISCUSSION ON WAYS TO INCREASE FARM YIELDS

Sofia KOOPERATIVNO SELO in Bulgarian 3 Nov 83 pp 1, 2

[Roundtable discussion with Ivan Tonev, vice president of the Central Council of the National Agroindustrial Union; senior scientific associate Emil Nikolov, vice president of the Agricultural Academy; professor Ivan Grozev; senior scientific associates Georgi Petrov and Boris Klochkov, both of the Wheat and Sunflower Institute, located in the outskirts of the city of General Tashevo; Bozhidar Rakov, president of the agroindustrial complex in Pordim, Pleven okrug; Encho Dimitrov, president of the agroindustrial complex in the village of Tsenovo, Ruse okrug; and Todor Dimitrov, president of the farm in Dulovo, branch of the Drustur agroindustrial complex in Silistra, conducted by KOOPERATIVNO SELO: "Intensification--The Basis for Stable Agriculture: What Are We Learning in 1983"; date and place not specified]

[Text] "...We should seek new means and resources for increasing agricultural production, and we should stop using nature's whims as an excuse. They cannot be an objective factor which delays further development"--Todor Zhivkov

Steadily following the party's April agrarian course, the 12th Congress of the Bulgarian Communist Party set the task of expanding and improving the material and technical basis of agriculture and its intensification on the basis of the latest achievements of scientific and technical progress. As a result of this, during recent years, our agriculture measures up to the successes of many of the best world standards. It proves the advantages of the socialist way of production, which is typified by its stable and steadfast rates of growth. It demonstrates this as well in such an unusual year as 1983, which has put our agricultural workers to the test. The experience throughout this year should enable them to make, or confirm, some very serious conclusions and lessons in the field of technologies and in the field of production management as well.

In order to respond to this vital necessity of the present day, the editors of KOOPERATIVNO SELO have organized a roundtable discussion of this topic with representatives of our agricultural science and with immediate leaders of agricultural production.

## The Potentials of the Grades and Their Structure

[Question] This is the first especially important question outlined during the conversation. An experiment took place with regard to the variety of types and grades, in order to find their natural potentials for high productivity, even when deviations from the normal meteorological conditions occur--prolonged drought, extreme heat, rainfall at unusual times, which have created a complicated phytosanitary situation during this year.

[Bozhidar Rakov] Grain production will continue to grow on the path of intensification, there is no other way. However, the most intensive grades of wheat, such as Pliska, Charodeyka, Skitiya, and Trayana, which are the best under normal conditions, should hardly ever be sown late or after inappropriate preceding crops, or on soil poorly prepared for wheat. They should hardly take over all the wheat area. It is necessary to look toward other, better yielding grades which are offered by our selection.

[Question] This is not a question of organizational shortcomings, but rather of unfavorable conditions?

[Bozhidar Rakov] That is right. I want to stress this--extremely unfavorable conditions: dry soil, delayed sowing after the late harvest of preceding crops. Such sowing does happen in practice, and in precisely such cases, I think, we should turn to grades that grow later, which as far as we know are as good as the rest.

[Georgi Petrov] As a matter of fact, some people have established the opinion that under these conditions the intensive grades will be a failure. There are no grounds for such fears. According to the results of the State Select Seed Commission, which we most certainly can rely upon, the intensive type grades took first place this year. Such grades are Vratsa, Trakiya, Yantur, Pliska, followed by Katya, Kardam, Trayana, and Sadovo, which are in the middle, between the semi-intensive and intensive grades. We consider that the Katya and Sadovo grades are the longest lasting during drought; however, the more intensive ones have surpassed them in yield and under this year's conditions.

[Bozhidar Rakov] Let me explain myself correctly. I am far from thinking that we should reject the intensive grades. I used the concept of yield for the end of the sowing, under exceptional conditions.

[Georgi Petrov] We should make the concept of yield clear. With respect to drought resistance, it is considered that the grade that reduces the yield less thus yields more. However, when a given grade yields the same amount as the most drought resistance ones, and surpasses them under favorable conditions, in my opinion, this grade is more valuable. This is the way it is with the Pliska and Trakiya grades, for instance.

[Emil Nikolov] We have grades which are slightly different in productivity. The differences depend on their intensity, on their ability to absorb fertilizers. We can divide them according to the time of sowing. Charodeyka, for

example, gives a very high yield, but if sown later it does not perform as well. In such cases, grades like Kaliakra-2, Kiten, Dobrudzha-1, Sadovo-1, and others do well. If sown later and under more extensive conditions, they are less pliable, they react better.

[Question] The evaluation of grades leads us to building a high-grade structure for separate cultures which will correspond to the particularities of micro-regions, as well as to the changes in meteorological conditions. Are there resources that move in this direction?

[Emil Nikolov] With respect to wheat and barley, we can conclude that we have a rich variety of grades available. They show an extraordinarily high adaptability, adjusting to the conditions during the period of vegetation. As far as the high-grade structure is concerned, it should in no way be established with one grade only, even if it were the best. Three or four intensive, leading grades, which react differently to unfavorable conditions, should be used. If one of them does not perform, the other will retain, generally speaking, a medium level. The leading grades should have the main portion of the sown area; as to the rest, there could be from 15 to 20 and more grades, some of which will enter and others of which will leave the sorting structure.

[Question] There are some failures with sunflowers during this year. Are they related to the high-grade structure?

[Emil Nikolov] The rainfall in July corrected, to a significant degree, the unfavorable consequences from the drought. However, the high temperatures significantly shortened the period of flowering. The heads of the sunflowers were not well pollinated and many seeds remained empty. This is a shortcoming of monosorting, despite the fact that we had four hybrids available. They are of the same type with respect to the vegetative period and they blossomed at the same time.

Similar phenomena can be observed with corn. Because of the high temperatures, the vitality of the pollen was reduced and the formation of grain was not good. Our select corn seed production is now based mainly on the highly productive hybrid N-708 and N-622. This year, N-708 simply burned up while still green from the high temperatures. It is a hydrophilic type, that is the way it was created. During its testing in Sitovo, Siliistra okrug, it yielded 927 kilograms of dry grain. An average yield of 936 kilograms was obtained from the Knezha-611 grade, which is a slightly early grade and not as hydrophilic, regardless of the conditions. Pioneer grade, which is almost the same as N-708 with respect to the vegetative period, yielded 970 kilograms of average yield, and succeeded in ripening with green leaves. This is very important and, in my opinion, it should be included as part of the select corn seeds.

#### Technological Discipline, but Also Creative Quest

Most of the plant-growing production in Bulgaria, especially grain production, already has a rich biofund available. This became obvious in the conversation which began, not accidentally, on genetic grounds, as a carrier of biological

prerequisites for forming determined conditions of quantity and quality of production. It is also well known that, under normal conditions, we have still not succeeded in fully utilizing the growth factor to determine the yield parameters. This question stood out even more acutely during 1983.

[Bozhidar Rakov] Now that we are at the end of the year, we can give ourselves a clear account of some essential failures in applying technologies. There will be such years in the future too, and this forces us to make the necessary estimate and conclusion in due time. We know well the interrelation between grade (hybrid) and timing and depth of sowing, timing and norm of fertilizing, number of plants and of productive related plants, number of ears and the grain in them. Everything is extremely clear; there are still production units, however, which underestimate one fact or another. For example, while cultivating the soil, we often allow five, six or seven diskings at a time. We attain very good quality, but we lose moisture and we sow in dry soil. It would be much better if there were fewer plants remnants, that the pre-sowing preparation of the soil for the fall crops is done once with KRN-3, combined with BD-3. Thus the moisture is preserved. This is particularly important for the spring crops. Where we performed multiple cultivations in the spring, and with the lack of rainfall, the cultured plants did not sprout and this benefited the weeds more. The conclusion that we should give priority to the fall crops is unavoidable.

[Encho Dimitrov] I do not know if I am right or not, but I am convinced that, if the weather permits us to sow fall crops, we should start plowing. In order to do this, we ought to have available enough power-supplied tractors and appropriate plows. Where we plow, the yields are higher. Multiple disking breaks up the soil.

[Question] Can we conclude that we should only plow?

[Bozhidar Rakov] We cannot say exactly whether we should plow or whether we should disk. Under certain conditions, we would have to plow, and at other times--disk. It is necessary to have a pragmatic approach.

[Boris Klochkov] It is correct that the plant factor raised such an important question as soil cultivation. The question is not only of technological but also of economic importance. If we decide to plow, we would have to sow until January.

#### Less but High Quality Cultivation

[Emil Nikolov] Minimal cultivation has proven its advantage with regard to later productivity and with regard to the quality of soil preparation as well. However, with the tools we have now, we cannot preserve the moisture well and ensure normal sprouting of the seedling. Over 10 years ago, the developed countries began to use a heavier disk type harrow with modified disks, which allow them, in two or three passes, to cultivate the soil to a depth of 10 to 12 centimeters by evening, thus preserving the moisture. They are now working on such a harrow in Bulgaria. I draw your attention to cultivation because it is related to the full use of the plant, the formation of the yield, respectively. We have learned to create wheat seedlings, raised well in greenhouses,

with 550-600-700 ears per square meter. However, we have not yet resolved the other important question, the question about the number of grains per ear. Whenever possible--40 grains per ear; we can harvest 22-25 on the average, but the percentage of ears with just 15 grains is still high. These are ears of plants sprouted from seeds that have penetrated the soil up to 2 centimeters in depth. This year confirmed the necessity of planting the seed at a depth of no less than 3 to 4 centimeters after smoothing over with a roller. This is important in order to create seedlings with the necessary number of ear-bearing stems and with more grain in the ears.

[Ivan Tonev] I think that what comrade Emil Nikolov said is correct. Of course we cannot get by without a plow when cultivating overly moist and solid, compact soils. We should not sow second crop corn in fields with lots of weeds, without tilling. We should continue to apply these reduced cultivations more widely; however, for this purpose, we should solve the problem of equipment.

[Question] In order to get a more complete answer to the question about the role of biological factors as components of production technology, perhaps it would be better to devote some attention to the question of soil fertility.

[Emil Nikolov] The circumstances this year which face us on this important question are very serious. I think that, first of all, we ought to learn an earnest lesson from the manifestations of wind erosion. What do the factors show? For the first time in Bulgaria, wind erosion appeared locally in northern Bulgaria in carbonized humus. Since then, its intensity has increased every year and was tripled during this year. This leads to decreasing the humus in the soil and speeds up its pulverization. Plant remnants are being burned en masse and we pay dearly for it. If we do not burn the stubble fields, 100 to 200 kilograms of organic substance per decare will be provided only from this. And in order to restrict wind and water erosion of the soil in its lightest varieties, it is necessary that we plow in approximately 180 kilograms of organic remnants annually.

The fight against erosion is a big problem, which should not be overlooked. Evidently, certain things ought to be re-evaluated--the size of the tracts, the cultivating system of the soil, and others. It is obvious that science should definitely be involved in this direction.

The question about using organic fertilizers for the soil arises more and more acutely. In Czechoslovakia and East Germany they are using green fertilizers for this purpose. The necessity of organic fertilizers is more strongly felt during drought years.

#### Irrigation--An Important Factor for Controlling Yields

[Question] In the resolution of the Politburo of the Central Committee of the Bulgarian Communist Party and the Council of Ministers concerning the negative results from the drought and the more efficient use of water in the country, an especially important place is devoted to irrigation. What does this year's experience show?

[Bozhidar Rakov] More than ever, it convinced us that irrigation is one of the most intensive factors for control of yields, and at the same time we saw that in practice we are not prepared to use water when we need it and in the amount required by plants. We ought to prepare ourselves for irrigating early by leveling and by making furrows in advance, in order to provide high productivity of irrigating labor.

[Encho Dimitrov] We irrigated many times. We irrigated a great part of the fall crops. We did not have enough experience in irrigating these crops. What does experience show us? We obtained good results from wheat which we irrigated at the beginning of April--500 kilograms per decare from some of the large tracts. Those irrigated at the end of May, at temperatures of 37-38° Celsius, turned black and burned up. There where we irrigated the areas, we damaged part or the seedlings as well.

[Ivan Tonev] And what conclusions did you draw from this? Is it possible and should we irrigate fall crops?

[Encho Dimitrov] I said that we did not have enough experience; however, I think that we should estimate and irrigate seedlings a little bit earlier.

[Ivan Tonev] I asked this question so that it could become more clear. Some people think that higher yields are obtained from fall crops if they are not irrigated. This is not true. The drought this year was worst in Pleven, Veliko Turnovo, and Ruse okrugs. There was a little rainfall in Plovdiv and Pazardzhik okrugs. The yield in these okrugs was 400 kilograms of wheat per decare. In Stara Zagora and Sliven, the yield was about 430 kilograms. Why? The wheat in these okrugs was irrigated 60 percent, and in Pazardzhik--90 percent. The high results came from the irrigation. We are not speaking, however, about irrigation no matter what, what we have in mind are well estimated norms and time of irrigation. This means that we should comply most strictly with the technological discipline. Very good results were obtained from irrigation with polyethylene pipes. And one more thing. Irrigating teams should be established on time and the irrigators should be well trained.

[Emil Nikolov] In France they are regularly using irrigation in April with reduced norms. Analysis over a period of 20 years shows that, in Bulgaria, the April drought affects the wheat yield negatively. Consequently, this year's experience should remind us that we need not wait for the drought to come, but rather irrigation in April should become a regular practice. Those who traditionally waited for the May rainfall lost out.

[Question] A complex phytosanitary situation was created this year. Now that we strike a balance, could we put forward demands for more flexible plant protection?

[Ivan Tonev] The conditions favored the creation of a complex phytosanitary situation. The situation with regard to potatoes, tomatoes, and tobacco was especially difficult. If we should look for objective reasons, we could say that we didn't have enough equipment for preparations. The truth is, however, that we were not prepared to handle such a difficult situation. There are

successes, however. The struggle with diseases and pests on vines and in orchards, on potatoes and grains. There are failures in preserving tobacco in northern Bulgaria, and tomatoes in a number of regions around the country.

In southern Bulgaria, where tobacco is an ancient occupation for many, the producers failed to handle the situation successfully. The horticulturists in Burgas and Sliven okrugs, and some agroindustrial complexes along the Maritsa River, in Plovdiv, Pazardzhik, and Khaskovo okrugs, preserved the tomatoes well. This shows that successful work is mostly a question of good organization for highly efficient use of available material and technical resources and most strict compliance with technological discipline in all units of the production process. Of course it is very important to provide modern equipment in order to be able to conduct the struggle successfully, even in the most difficult phytosanitary situation.

#### All Resources--In Action

[Question] In order to overcome the consequences of natural disasters, the economic organizations and enterprises developed additional activities to compensate for the damages caused to them by pointing out the resources contained in our socialist agriculture. What are these efforts aimed toward?

[Ivanov Tonet] In fulfilling the resolution of the Politburo of the Central Committee of the Bulgarian Communist Party and the Council of Ministers, the Central Council of the National Agroindustrial Union, the leadership of the Okrug Agroindustrial Union and all agroindustrial complexes adopted their own activities for restoring the consequences of the unfavorable climatic conditions. The efforts were aimed at sowing second crops and pre-cultures, improving the care of the main crops and cultivating them with fewer losses, increasing the production of livestock breeding, and realizing savings of material, labor, and energy.

#### Livestock Breeding -- A Primary Source for More Agricultural Production

[Question] The compensatory programs in this branch were aimed not only at achieving the planned indices, but also at providing livestock production above the planned level, which would help to cover a certain part of the damages caused by disasters. What are the results?

[Todor Dimitrov] Despite the natural disasters this year, we do have extremely high results. We expect to have 4,000 liters per cow, compared to the planned average of 3,600 liters per cow. We will give the state 1,500 tons of milk above the plan.

[Encho Dimitrov] Regardless of the drought, the results in our livestock breeding are better than last year. We will give over 700 tons of milk. Sheep breeding will also provide more production, which will contribute to the expectation of better economic results in the agroindustrial complexes.

[Ivanov Tonev] On a national scale, livestock breeding will end the year with good results. The plan for production of meat during the first 9 months was

fulfilled by 102 percent, of milk--103 percent, and of eggs--103.2 percent. We hope that the momentum gained will keep up the pace in all cases by the end of the year, and that it will be kept in ruminant livestock breeding during next year as well.

[Question] How could you explain these good results in livestock breeding, despite the difficulties and damages caused during this unusual year? And what conclusions could be made?

[Todor Dimitrov] We definitely think that our successes in milk cattle breeding are due to standardized feeding and new technologies, and to improved labor organization. In my opinion, standardized feeding, which is based mainly on using high quality bulk fodders, allowed us to improve feeding considerably, to give cattle a chance to show, to a great extent, their genetic capabilities. By making the necessary conclusions this year, we again provided sufficient fodder to last through September next year, which will allow us to feed all kinds of ruminant livestock with monoportions.

[Ivan Tonev] When evaluating what our livestock breeding has achieved during this difficult year, several conclusions come to mind.

The first conclusion points out that we are successfully fulfilling and over-fulfilling the plan for livestock production because we entered 1983 with a sufficient number of livestock in the main herds, with the necessary number of fattening livestock, especially hogs. The drive to breed 200,000 sows also gave good results. The number of fattening livestock was also about 10 percent higher. And here is the result. The plan for meat has been overfulfilled. It is very clear that without the necessary number of livestock, we cannot fulfill the goals of livestock breeding.

The second conclusion shows that despite a difficult year we succeeded in providing good feed for the stock, since in 1982 there was more grain, silage, and other fodder produced. This provided the conditions for better manifestations of the livestock's biological capabilities. The average milk yield per cow was increased by 200 liters last year, and this year, during this 9-month period alone, it increased by 181 liters. Some okrugs, such as Stara Zagora and Shumen, which were falling behind before, made a decisive step forward in milk cattle breeding.

The third conclusion, which explains the success achieved, is applying some new technologies and technological decisions in livestock breeding on a large scale.

The implementation of some innovations of technical progress also played a decisive role in these difficult conditions. In milk cattle breeding, a specialized organization of milk production was adopted, in which the cows are fed in groups according to their physiological condition, on the basis of the right type of brigade, combined with standardized feeding. In poultry breeding, 30 percent of the birds are put in tri-level cell batteries, which have a number of advantages. In hog breeding, box breeding was introduced, and so forth.

All this, and some other factors, contributed not only to producing more but also to increasing profitability.

[Todor Dimitrov] I agree entirely with the conclusions made by Comrade Tonev. I would like to stress that without a successful solution of the fodder problem, we will not be able at all to move forward constantly in livestock breeding. It could be considered solved here. The cultivation of corn for silage, second culture, helped us extremely, so that we were able to produce more bulk fodder. We got a yield of 2.5 tons of green mass each from this corn.

[Encho Dimitrov] In order to provide for the fodder production, we used quite a few second crops. In 1982 we sowed 16,000 decares, compared to the planned 6,000 decares, and this year--19,000 decares. We got a yield of 2.5-3 tons of raw material from the areas under irrigation. The results in conditions without irrigation are not good. From some areas, we got a yield of 600-700 kilograms of green mass, whereas others were not even good enough for pasture. We sowed many areas directly, but the results were worse than in the others, which we sowed in the traditional way.

#### Raising Second Crops Requires the Same Care as Raising First Crops

[Bozhidar Rakov] We sow fewer second crops at the expense of increasing the amount of care for them, however. We devote the same kind of care to them as to the first crops. It is like that not only in our agroindustrial complex but around the whole okrug. Without herbicides and fertilizers, we could not raise second crops.

[Todor Dimitrov] In any case, we should not blame direct sowing for the failure of second crops. The technological process should be followed exactly. Each time there is an oversight, there are consequences. We raised second crop corn for silage this year on 20,000 decares. We sowed with Soviet seeders, following a strict order in our work. In the mechanized teams, the combines were followed by straw cutters, and the seeders came after them. We treated the areas with herbicides. We sowed directly with fertilizers. This is what we did and we got a yield of 2.5 tons of green mass.

[Ivan Tonev] There should not be any arguing about the advantages of direct sowing. The reason for failures with second crops should be sought somewhere in the gaps along the technological chain. Of course, where direct sowing took place on weed growing areas, rather than after plowing, we cannot expect good results at all. In some places direct sowing is being applied incorrectly, and then we deny it afterwards. Where the sequence was strictly followed--harvest, gathering of straw, and sowing--there are obvious successes. I would like to point to Pazardzhik as an example. This year we sowed about 4 million decares with second crops, and thanks to that we succeeded in solving the silage problem.

[Question] Correct organization of fodder production has great importance for success in this activity. Silistra okrug is one of the first which created livestock fodder complexes. What are the results?

[Todor Dimitrov] These complexes which we built in the okrug gave an extraordinarily big boost to livestock breeding. There are four of them in our agro-industrial complex, built on the basis of putting the livestock together and on combined fodder production. Under this new organization, especially important care is being devoted to alfalfa and corn. All agrotechnical activities are being applied on time, and in a scientific way. The brigade workers do not have any other goal but producing more and higher quality fodder. And this can be achieved. Now we have enough fodder available to last through November of next year. And no surprises can disturb the regular feeding of the stock. There are now real conditions for us to strive for yields of 4.5, even 5 tons of milk per cow on the average.

#### Planning and Organization of Labor Production

[Question] Our conversation today confirms once again that agriculture has its specific peculiarities, as a branch, which should be taken into consideration. What do you think, were these particularities taken into consideration in 1983?

[Ivan Grozov] Agriculture has its favorable and unfavorable years, but in most cases these are normal. Last year, for instance, was very favorable, and we had high results.

The scientific organization of production and management of agriculture requires that we take into consideration the specific peculiarities of this branch, which means that when we do the planning, we should think of the average tendencies, drawn from good and bad years, that is, from at least one 5-year period. In practice we often forget this. We bet on indices that were obtained from the best years.

If we had planned according to the special nature of the branch, that is, not based on what was achieved during the most favorable year, 1982, but rather based on the average indices from the last 5 years, the surprise would not have been as great. We are close to the average indices for the past 5 years, even with the yield in grain production we had during this year!

In my opinion, a very important conclusion emerges: the high technical equipment of our agriculture already allows us considerably to alleviate the negative effect of unfavorable climatic conditions for each individual year and to achieve a high degree of stability in agricultural production. This urges us even more to put forth planning as well on a scientific basis, so that we do not create difficulties for the state in balancing the budget.

It is necessary to approach, creatively and profoundly, the special nature of this branch, to take this into account along the entire chain of management, beginning with the system of planning, incentives, and material and technical supply, and ending with the system of balancing with respect to materials, raw materials, and fuel, as well as with respect to work force and financing. Could we say that we have achieved all this during 1983? Yes, to a great extent; however, we do have weaknesses, oversights, unsolved problems. It was already mentioned here that, despite the difficult phytosanitary circumstances

during this year, if we had had good plant protection equipment, the necessary effective preparations and stronger organization, we could have saved the crops from all the plantings. If we add to this the shortcomings in organization and management of production, it turns out that the unfavorable climatic conditions are not the only reasons for failure. Some agroindustrial complexes and brigades managed to save the crops, given the same conditions and with the same equipment.

Another conclusion emerges: it is necessary to apply creatively the entire complex of activities in the branch. The point is to strengthen the initiative and independence of economic organizations and production units so that they can estimate for themselves where, when, and what they are supposed to do, taking into consideration the specific peculiarities not only of the branch, but also of the year and of individual seasons. In this connection as well, the year 1983 set a good example. The mere fact that whole agroindustrial complexes and separate production units managed to handle the tasks, even under unfavorable climatic conditions, and to obtain good results, confirms that.

On the other hand, there is a need for flexibility with regard to organizational forms of management and leadership.

#### What Essentially Are the Compensatory Programs?

[Ivan Grozev] To adapt the overall labor and production organization according to the concrete conditions of the year: sowing second crops, strengthening additional activities, and others. It becomes obvious that a given crop would not ensure planned production and, consequently, income, and efforts were directed toward other crops and activities. Almost all the agroindustrial complexes adopted the new incentive system, showing flexibility in organizing production. There was one item in the plan for second crops, and yet it turned out differently in practice. People did not wait for instructions, they themselves undertook sowing more second crops. Another year it turned out just the opposite.

[Encho Dimitrov] That is perfectly correct. Stimulation is especially important. Additional incentives for decreased expenditure of material resources and economies in the Wage Fund gave really good results. These results, however, could have been even better if the elements of the economic mechanism were actually working thoroughly and consecutively. For example, labor productivity is being planned on the basis of what was achieved in 1982. Do not the leaders and producers know that this was the most favorable year? They do! And when unfavorable 1983 arrived, they affirmed the conviction that this index was unattainable. And what incentive would they have for the future? Most of the agroindustrial complexes and production units are now in an unfavorable situation, not only as far as this index is concerned, and this is not their fault at all. And they encounter difficulties in paying off their debts.

[Bozhidar Rakov] We will not be able, for example, to fulfill the general production plan by 100 percent, but we reduced material expenditures by 720,000 leva, and labor expenses by 510,000 leva. This enabled us to remunerate up to

90-92 percent toward the end of the year. And we have 2.5 million leva available in the Reserve Fund.

[Question] This signifies that you have enough means of your own to pay people.

[Bozhidar Rakov] We have them but we are unable to use them.

[Question] Why?

[Bozhidar Rakov] The scheme for income distribution does not allow that, since the planned labor activity has not been attained.

[Encho Dimitrov] That is the way it is!

[Question] Is it possible and should something be done right now, before the end of the year, so that those who have worked well and have fulfilled the plan can receive all the remuneration due them?

[Ivan Grozev] There should be a more thorough and exact account of the specific peculiarities of this branch and of this year, to introduce more precision. What is all this talk about? Bozhidar Rakov and Encho Dimitrov said that they would be able to remunerate people at 90-92 percent of the rate, but no more. This means that those who worked best would receive the same percentage of their remuneration due as those who fulfilled their plans only by half. This is complete wage leveling. Just think that the complex has 2.5 million leva in the Reserve Fund, and yet it cannot pay off its people; now this sounds unnatural. The new economic mechanism did not allow the use of this fund! This is what I disagree with, categorically. The scheme for income distribution and the whole mechanism as well have been developed to fit the conditions of a normal year. They could not take into account the specific peculiarities of each individual year. And now, instead of showing creativity in making the appropriate explanations, and concreteness too, we refer to the economic mechanism. But does not this mechanism require showing creativity? To have your own reserve fund, to have accumulated means in it for using them in precisely a year such as the current one, and to feel that your hands are tied and you are not able to pay! This is, to put it mildly, understanding and applying, incorrectly, the letter and spirit of the economic approach and its mechanism.

A few words about the effectiveness of production. There is an argument about whether we should have used high quantities of fertilizers and whether we should have irrigated. Well, you see we had greater expenses, and their effect was insignificant. Does this mean that we should not use fertilizers and not irrigate? Of course not. The question is doing this with optimum timing and norms. We have not yet said, however, what the optimum is for using fertilizers for different crops, we have not established the economic threshold. We give prizes to those who have obtained the highest yield, without taking into account the expenses of doing that and what the prime cost is. This is what happens in practice. People strive for high yield, often with unjustified high expenses. Therefore we need a highly effective intensification, not only as an end in itself. We need economic evaluation everywhere, and in everything.

## Some of the Lessons Learned From the Conversation

Regardless of the climatic particularities of each individual year, plant breeding production should be carried out on the basis of intensive grades and hybrids.

The grading structure should be founded mainly on the basis of three-four grades (hybrids), genetically heterogeneous, and it should be in compliance with geographic, topographical and climatic particularities of the microregion.

Plant production in the future will continue to be carried out on the basis of scientifically grounded intensive and superintensive technologies, developed for normal year conditions, and, depending on climatic particularities, using creativity in applying the separate link of the technologies.

In order to achieve stable rates in livestock production, regardless of climatic conditions, it is obligatory to ensure fulfillment of the planned goals for the number of livestock in the main herds and in the fattening herds.

The production of more and higher quality fodder, and especially of bulk fodders, mostly silage for ruminant livestock, for year-round standardized feeding, the production of mixtures for hogs and poultry are a major condition for overcoming climatic inconveniences and providing a steady rate of development in livestock breeding.

It is necessary to have a creative relationship with the special nature of this branch, which should be taken into account everywhere along the whole chain of production management, beginning with the planning and the material and technical supply, and ending with the system for balancing materials, raw materials, and fuel, and work force and financing as well.

In order to overcome natural disasters successfully, it is necessary to realize, in a faster way, highly effective intensification of production, to apply creatively the economic approach everywhere and in everything.

It is difficult to cover, in one conversation, the great variety of problems which agricultural workers had to face during this difficult year.

We hope that the questions raised in the conversation will arouse the labor collectives of the brigades and farms, the leaders and specialists of agroindustrial complexes, and of the okrug agroindustrial unions. And they will make the necessary conclusions, will learn the lessons about more successful work in the future, to increase the abundance on the national table.

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PLANS TO SUPPLY SMALL IMPLEMENTS TO PRIVATE FARMS IN 1984

Mechanization in Private Farms

Sofia ZEMEDELSKO ZNAME in Bulgarian 3 Nov 83 p 2

[Article by Petko Sirakov, director of the enterprise for small farm implements in Botevgrad]

[Text] During 1984, 10 commercial sites for selling small farm implements will be opened.

Significant results have been achieved lately in fulfilling the party resolutions for using the capacities of private and subsidiary farms at full value and for turning them into a strong home front in the system of self-subsistence--the supply of poultry and breeding and fattening stock, sowing seeds and seedlings, fodder, and others, has been improved. Despite this, however, the intensive factors for a sharp increase in effective production have not been applied.

The most crucial point is supplying private and subsidiary farms with small farm implements, small capacity machines, tools, and advanced technology and equipment that are more appropriate for application to concrete conditions. The small farm implements that have been offered so far do not comply with the requirements--they are far from being complete, the quality is below the required level. This creates additional difficulties for citizens and, as a result, their labor is primitive, their productivity low.

An enterprise for small farm implements, located in Botevgrad, was established as part of the National Agroindustrial Union in order to solve, in a timely and effective manner, the problem of comprehensive supply of equipment and implements for private and subsidiary farms, of studying and applying worldwide achievements in this area. Its primary goal is to produce experimental models and prototypes, to organize service maintenance, to carry out wholesale and retail trade with small capacity machines, farm implements, implements, spare parts, packing, chemical fertilizers and plant protection preparations, sowing seeds and seedlings for private and subsidiary farms.

The first steps have already been taken:

As a beginning, the Ministry of Machine Building and Electronics was assigned the production of 124 types of products, most of which will appear for the first time on the market, or they will be qualitatively renovated.

During this year, the engine laboratory at the Metal Technology Scientific Industrial Trust in Varna has developed a diesel engine with a low fuel consumption, with 10-14 horsepower, of which the first 500 will be manufactured during the next year.

In the Anton Ivanov Plant in Plovdiv, the preparatory work has been completed and serial production of a Bulgarian rototiller, with an accompanying set of tractor-driven machines, will begin by the end of this year.

Within the system of the second large producer--the enterprises of the main directorate of Local Production and Public Services--approximately 90 types of small farm implements are being manufactured. The Central Cooperative Union has the monopoly on agricultural supplies.

In order to satisfy more quickly the needs of the private and subsidiary farms for complex trade service, a specialized store was opened in Botevgrad in June of this year. It offers all kinds of chemical preparations for plant protection, artificial fertilizers, small farm implements, agricultural supplies, small mechanization instruments--fodder grinders, water pumps, milking machines (imported from East Germany), Teri rototillers (imported from Czechoslovakia), Labin Progress rototillers (licensed by the Goldoni Firm, Italy), and others.

In addition, the enterprise has a specialized unit available which provides necessary information, at telephone number 32-54, on all kinds of questions related to private farms.

The projection is to open 10 more such stores in 1984, which will in fact cover almost all parts of our country. Thus, in precisely this way, the enterprise intends to make its contribution to increasing the harvest from private farms.

#### Shopping Trip in Botevgrad

Sofia ZEMEDELSKO ZNAME in Bulgarian 3 Nov 83 p 2

[Article by Iv. Salabeshev]

[Text] The fact that the yard of the store for small farm implements, which was opened in June in Botevgrad, was immediately filled with the small tractors awaited by Bulgarian farmers, already speaks about the organized, quick, and timely satisfaction of consumers' interests. In addition to the tractor-driven equipment for rototillers, a number of other products of immediate necessity on private farms can be seen in the store: beginning with cord and pruning shears and ending with milking machines.

As a matter of fact, the first results from the enterprise's activity do not end with only the opening of the store. At this moment the designers'

department is busy developing plans for a universal small capacity machine for private farms. It is essentially a rototiller, but more affordable than related machines--in terms of design and in terms of price as well. It will have a cutting machine, cultivator, plow, mower, trailer, and different stationary equipment, such as a water pump, wood cutter, and others. Its initial model has already been designed in the model laboratory.

The task of building a cutting machine for root crops--potatoes, squash, beets--with manual and electric starting, is almost at the point of completion. A universal cage for raising poultry--small chickens, laying hens and broiler hens--is ready for production.

In brief, there are already things to buy in Botevgrad. And there will be still more...

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CZECHOSLOVAKIA

NYKRYN CRITICIZES CSSR EXPORT POSITION IN WORLD TRADE

Prague POLITICKA EKONOMIE in Czech No 9, 1983 pp 975-986

[Article by Jaroslav Nykryn: "The Role of External Economic Relations in the Development of Czechoslovak Economy"]

[Text] External economic relations are a profoundly structured complex of economic factors which may act, and frequently do act, relatively independently vis-a-vis foreign countries even in the closest possible mutual interdependence and internal correlation with individual stages in the processes of reproduction. If we therefore speak of the role of those relations in the development of the national economy, we are guilty of a certain oversimplification; actually, it is the role of cooperation in production with foreign countries, the role of scientific and technological relations, foreign trade and other factors, each of which has its specific functions and its specific effects. Of course, the extent of the terminological leeway in this case is no greater than in other cases. We simply refer to the summary role of the entire complex.

Nevertheless, it would be inadmissible leniency to equate external economic relations with foreign trade. Foreign trade is only one of many factors in external economic relations, although it occupies a special position among them. As is known, in most attempts to quantify the role of external economic relations in the national economy we are helping ourselves mainly by using indicators from the area of foreign trade -- shares in national income, per capita export outputs, export quotas of production enterprises, and so on.

In this contribution we shall refer again most frequently to foreign trade and use data from that branch of national economy. Thus, we shall follow the traditional approach because foreign trade displays the most interconnections with other parts of external economic relations.

Foreign Trade in External Economic Relations

The position of foreign trade within the complex of external economic relations will become clear from a simplified review of the main factors in those relations, among which are (always in certain relation to foreign countries);

- research and development (R & D);
- scientific contacts and cooperation;

- planning, consultation, advisory and other preproduction services;
- specialization and cooperation in production;
- participation in the construction of industrial projects and other investment programs;
- international transportation (for example, transit), freight hauling, storage, insurance and other accessory or independent services;
- foreign trade proper, i.e., conventional and nonconventional exports and imports;
- application of industrial rights;
- financial and credit relations.

The special position of foreign trade stems from the fact that the radius of its operations is practically as broad as the sum of all the above-mentioned factors. Through foreign trade all economic inputs from abroad take place in the form of goods and currency, regardless of the form of utility value (physical products, industrial rights, authors' royalties, etc.) and of the area where the given relations to foreign countries (the production sphere, exchange sphere) originate. There is no need to mention that in the sector where economic relations represented by foreign trade take place the most varied inputs and outputs become anonymous and that they become export or import goods whose values are entered in the trade balance and balance of payments of the state, whether they concern manufacturing installations or technical know-how in one case, and in another the factor of cooperation or publishing rights. From that viewpoint foreign trade covers a whole complex of foreign economic relations; it is the factor that links the process of reproduction in one economy with similar processes in other economies.

Among the fundamental functions of foreign trade as a sector of the national economy in a specific national economy is its transforming function based on the conversion of the material structure of social products before their utilization. The produced sources are designated for use within a certain period of time and are increased by imports and, at the same time, reduced by exports. The mutual relation existing between imports and exports is determined by the requirements of the balance of payments. Foreign trade appears in the process of reproduction on the side of resources as well as on the side of utilization. The basic economic function of foreign trade connected with economy of time and with efficiency of production is no less important, because foreign trade makes it possible to enjoy the objective benefits of international division of labor, advantages stemming from the effect of specialization, from the volume of production and mass manufacture as well as from different cost relations in individual branches of national economy vis-a-vis world relations. The transferring function of foreign trade depends on the opportunity to obtain by its mediation achievements of international research and development and to make them available to one's own production base.

## The Development of Czechoslovak Foreign Trade Thus Far

The total turnover of Czechoslovak foreign trade (in current fco prices bordering the supplier's country, in hard currency Kcs, all according to the data in "Facts on Czechoslovak Foreign Trade" for appropriate years) is fast approaching the level of 200 billion:

	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>
Turnover	53.9	97.4	161.7	174.0
Imports	26.6	50.7	81.5	86.3
Exports	27.3	46.7	80.2	87.7

In the period from 1970 to 1981 the turnover increased 3.2 times and the physical volume 1.7 times.

The structure of goods in Czechoslovak foreign trade has not changed drastically since 1970.

That is evident from the following percentage structure:

<u>Export</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>
I. Machinery, installations	50.2	48.0	50.2	52.3
II. Raw materials, fuels	29.4	30.3	29.7	27.1
III. Cattle on the hoof	0.1	0.1	0.1	0.1
IV. Foodstuffs, including raw materials	3.8	4.2	4.2	3.8
V. Industrial consumer goods	16.5	17.4	15.8	16.7

<u>Import</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>
I. Machinery, installations	33.3	36.9	36.6	34.6
II. Raw materials, fuels	43.1	46.6	48.7	52.7
III. Cattle on the hoof	0.3	0.1	0.1	0.1
IV. Foodstuffs, including raw materials	14.8	9.2	8.7	7.3
V. Industrial consumer goods	8.5	7.2	5.9	5.3

Nevertheless, the rise in group II and the decline in groups IV and V in imports are noteworthy. In terms of the offer in Czechoslovak domestic market, the very low share of import of industrial consumer goods, which in comparable countries is two to four times higher, is very negative.

The territorial structure of Czechoslovak foreign trade developed without substantial changes:

<u>Share in exports in percent</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>
Socialist countries	70.6	71.5	69.6	71.1
of which CEMA	64.7	66.5	65.2	66.4
other socialist countries	5.9	5.0	4.4	4.7
Nonsocialist countries	29.4	28.5	30.4	28.9
of which capitalist countries	20.4	19.9	21.8	19.6
developing countries	9.0	8.6	8.6	9.3
<u>Share in imports in percent</u>				
Socialist countries	69.4	69.8	70.2	72.8
of which CEMA	63.8	65.6	65.9	67.9
other socialist countries	5.6	4.2	4.3	4.9
Nonsocialist countries	30.6	30.2	29.8	27.2
of which capitalist countries	24.5	24.6	24.4	22.2
developing countries	6.1	5.6	5.4	5.0

Foreign trade and the whole complex of external economic relations of the CSSR inevitably precipitate toward the USSR and other CEMA countries. In the period under observation the positive factors of socialist economic integration gradually came to the fore; simple foreign trade expanded step by step into non-traditional forms based on specialization and cooperation in production; procurement of crude oil, natural gas, iron ore, nonferrous metals and other essential commodities was reliably guaranteed by the USSR; coordination of national economic plans and long-range trade agreements based on those plans enabled Czechoslovak production and foreign trade to stabilize appropriate trade and production programs systematically from 1971 through 1975, in 1976 through 1980 and now from 1981 through 1985. Vital projects, such as the construction of the transit gas pipeline, were launched; cooperation in R & D with the USSR and other CEMA countries continued; some contractual and legal bases of economic contacts with those countries were upgraded. Aside from the predominant, indubitably positive aspects of those relations some open problems also appeared; the CEMA countries are aware of them and must gradually deal with them (the problem of more thorough coordination of national economic policies, particularly in the area of investment programs and pricing; more far-reaching development of specialization, and above all, industrial cooperation; problems with closer cooperation in R & D, joint procedures in third markets, etc.).

Unfortunately, the CSSR export structure has not improved noticeably in relations with industrially advanced capitalist states. In particular, the share of machinery and installations has been, and still remains, low; imports of fodders were high, and some other structural problems of Czechoslovak export and import continued. Among principal partners of the CSSR were, and evidently will remain: the FRG (according to the averages in 1970-1981, about 25 percent of the turnover with those countries), Austria (about 13 percent), Switzerland and Great Britain (each country steadily about 8 percent), the USA (about 7 percent), Italy (about 7 percent), France (about 6.5 percent) and so on. In trade with the states of the EEC [European Economic Community] a situation without contracts has existed since 1975, and thus those relations are conducted essentially only on the basis of autonomous funds of trade policy; in

some cases they are not very favorable, especially to Czechoslovak exports (customs charges, quantitative restrictions, administrative impediments, etc., including the USA's refusal to grant the most favored nation status). Agreements on cooperation in economy, industry, R & D, concluded with many advanced capitalist states, cannot fully replace trade agreements.

In economic relations with the developing countries, next to the decisive form of simple exports and imports, certain aspects of cooperation in production and new factors of cooperation in conjunction with the delivery of investment units and offer of technical assistance (one of them, which we mention in view of the whole framework of this contribution, is the training of specialists from certain developing countries in foreign trade by the chair of foreign trade at the VSE [College of Economics] in Prague) developed in the course of time. A characteristic but unfortunate trait in trade relations of the CSSR with the developing countries is the one-sided developed of the trade balance:

	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>
Czechoslovak export in Kcs billion	2.5	6.0	10.4	10.3
Czechoslovak import	<u>1.6</u>	<u>2.8</u>	<u>4.5</u>	<u>4.4</u>
CSSR assets	0.9	3.2	5.9	5.9

"Activation" of Czechoslovak assets, especially in certain developing countries, posed, and still poses, some problems.

The figures and data from the area of foreign trade may be interesting, although they could be further complemented. However, the problem is that they characterize only a partial sector of external economic relations and not the full depth and width of those relations. Even more significant is then the fact that external economic relations reflect economic achievements based on material production, R & D, stemming from the existing structures of production, from the overall efficiency of Czechoslovak economy and, to a given extent, from the overall level of its management. In a certain sense external economic relations only mirror in some way the actual situation of the economy as a whole and only partially contribute toward the development of its efficiency.

#### Some of the Most Relevant Problems

1. Despite a rapid growth in the volume of foreign trade, international comparison demonstrates that integration of the CSSR economy into international division of labor still remains under the optimum level. The significance of foreign trade in the creation and use of national income increased from about 22 percent in 1970 to approximately 35 percent in 1982; nevertheless, this share is substantially higher in other comparable, typically processing economies. While the share of some capitalist states with comparable economic dimensions and structure has been rising in world trade, the opposite is true in our case. The share of the CSSR in that trade in 1965 amounted to 1.5 percent; it declined to 0.9 percent at present. Moreover, the share of the CSSR in total mutual trade of the CEMA countries plummeted from about 13 percent in 1965 to the current 9.5 percent. The volume of per capita foreign trade is a

vital indicator of the decline in export efficiency and the degree of our integration in international division of labor; it confirms that our rate of growth is lagging not only behind the industrially developed capitalist states but even behind some of the CEMA countries, specifically Bulgaria and the GDR. In 1970 the CSSR still held the first place in per capita rate in export turnover among the CEMA countries, but in 1982 it slid down to the 4th place, behind the GDR, the Hungarian People's Republic and the Bulgarian People's Republic. A serious drop in the export efficiency of the CSSR economy occurred in our engineering industry. The Czechoslovak share in world engineering export declined from 2.78 percent in 1965 to 2.10 percent in 1970 and to only 1.49 percent in 1978; that particular trend has not changed for the better to this day. The CSSR slid down to the 15th place on the scale of exporters of machinery and installations in the world. We are exporting about 30 percent of total machinery production, while comparable countries export 50-70 percent. The most serious decline of Czechoslovak machine engineering took place in the above-mentioned period in relation to advanced capitalist states; it is a ten-fold drop, i.e., from 2 percent to 0.2 percent of the share of all exports of those states. Since engineering is vitally important for the Czechoslovak economy and Czechoslovak exports, these figures prove that the unsatisfactory standard of export efficiency of Czechoslovak production has been affected mainly by the situation of our engineering industry.

2. Excessively high consumption of energy and raw materials, or other materials, in production is another serious problem of Czechoslovak production which is negatively projected into the area of external economic relations, both in export (as confirmed, for instance, by international comparison of per kg prices) and imports (as evident from the requirement of great quantities of imported raw materials and materials). Under comparable conditions the above-mentioned consumption in production is roughly 30-40 percent (and sometimes even more) above that, for example, in EEC countries. In recent years the average per kg price of our imports without VRCV amounted to approximately Kcs 1.12 and the average per kg price of our exports to Kcs 3.35, which means that we only add about Kcs 2 worth of national labor to each Kcs 1 of imported raw materials and materials. In comparison with similar processing-type economies it appears that in their case the value of added national labor is increased 5 to 10 times, and in the case of Switzerland as much as 15 times. In engineering exports the per kg prices of Czechoslovak products have slightly increased in recent years, however, by far not at the same rate as in the capitalist countries and some socialist states. Despite all the relativity of that indicator, it is clearly evident that, in conjunction with high consumption in production, the problem stems neither from the shortages of raw materials, materials and energy, nor from the shortages of manpower but from the extent to which such resources are utilized and adapted to world technical and technological standards.

3. The third among the selected problems is the hypertrophic width of the line of goods manufactured by our engineering industry. Again, its consequences were, and still are, evident in foreign trade, mainly in exports. According to identical Soviet and U.S. sources, about 600,000 basic types of engineering products are manufactured today in the world. About 50 percent of that assortment is made in the USA, about 20 percent in the FRG, and approximately

17 percent in Japan. In the light of these data the Czechoslovak line of engineering products, which includes perhaps two-thirds (possibly even more) of the world line of goods, seems obviously excessive. On the one hand, it may be proof of our ability to produce almost anything, but on the other hand, which is more important, it compels us not only to ponder this fact but, above all, to take steps toward great specialization in the Czechoslovak engineering industry, particularly by international specialization and cooperation with the CEMA member states. The negative consequences of the excessive scope of our engineering production does not need more detailed evidence; those consequences appear in labor productivity (because of the small production series) as well as in the technical standard and quality of engineering products (because proper attention cannot be given to every group and subgroup of the engineering line). All that is naturally linked with the long-range concept of investment policy which plots the structure of engineering production and the direction for its further development several years in advance. It does not concern only the Czechoslovak concept of investment policy but also, or above all, its more thorough international coordination with the USSR and other CEMA countries. Its objective is to intensify the participation of the CSSR in the process of socialist economic integration, in implementation of long-range goal-oriented programs of cooperation (not only in engineering) and in application of other measures for the purpose of integration. The long-range program of specialization and cooperation between the CSSR and the USSR until 1990, which implements the objectives of integration and efficiently promotes acceleration of R & D, is of special importance.

4. One of the most complex problems in Czechoslovak export and its efficiency concerns domestic supplier-consumer relations between organizations of foreign trade and the VHJ's [economic production units]. In those relations Czechoslovak export organizations do not hold an equitable position with the supplier VHJ's in terms of the required line of goods, technical standard and quality, accessory services, delivery terms and other usual requirements of foreign consumers who purchase products made in the CSSR. The situation thus far had not been fundamentally changed by certain modifications of the legal aspect of these domestic relations, nor by measures within the Set of Measures. While the situation that exists in this sector of CSSR economy (and not only there) may be described as the "supplier's market," where essentially the Czechoslovak production sphere stipulates to foreign trade organizations what is to be sold, it is exactly the opposite in external economic relations, or more precisely, in foreign markets. There -- with slight exceptions -- it applies that the buyer predominates, and obviously will continue to predominate, over the seller; the buyer's market which exists there determines what will be produced and how it will cover the needs. It is a fact that foreign trade employees cannot devote enough time and energy to their most essential, i.e., commercial, work and research the market, the prices, competition, commercial methods, etc, because they spend roughly one half of their energy in negotiations with the manufacturers who supply the goods, and in "wresting" appropriate export funds. This is also reflected in the overall efficiency of exports, where the highest world efficiency standard is being upgraded faster than that of Czechoslovak efficiency; Czechoslovak production still fails to perceive the world properly. At the Seventh Plenum of the CPCZ Central Committee, Comrade Gustav Husak noted: "If we intend to retain our position as an industrially advanced country, our production must reach the world standard or at

least come as close to it as possible... Everybody bears his share of responsibility and the duty to measure his achievements against the world standard, to apply the best experience from the socialist countries, from the whole world, and to be flexible in adapting our products to the demands of domestic and foreign trade. Introduction of new products still frequently complicates life for a while or may even adversely affect the fulfillment of the plan. It is therefore necessary to accept measures which will restore harmony of those demands."

Naturally, it may be possible to present additional examples of the problems and of the dramatic way they affect Czechoslovak external economic relations, particularly exports. We shall briefly mention at least the following:

-- domestic Czechoslovak technical and technological norms, standards of quality, "safety" coefficients, etc. still are not up to world standards, although it is axiomatic that foreign customers, whether in the USSR or in France, India or Argentina, are not buying according to their national norms but according to the top world norms;

-- the cycle "science--R & D--production--export" still continues to be disproportionately lengthy and this is reflected in the introduction of achievements of R & D in production and exports as well as in the terms of delivery, sometimes even of common goods;

-- in some cases we have been losing foreign markets also because we are unable to mass produce top products of the Czechoslovak engineering industry developed in our country and to continue improving them. We may mention as an example the well known BD 200 spindleless ring machine; our competition succeeded in further improving this equipment so that their price now exceeds our price fourfold because, in fact, it is now a new product with a superpremium price for innovation. The same applies for certain other products, such as Zetor 8011 tractors. The prices earned for our exported Skoda 120 LS automobiles as compared with those of competitive vehicles of the same category are well known; however, it may not be known that the truly best product of our engineering industry, such as, for example, L-39 training jet airplane, may earn really top price (export of one airplane of that model represents the value of about 800 average passenger automobiles);

-- the depreciation quota of the CSSR production base is substantially lower than in the industrial world, where it amounts to 25 percent, because in international comparison modern machine equipment is judged according to the service life cycle, which now amounts in the world to 4-5 years and which is the precondition for further innovation and, by the same token, proof of the real effect of R & D revolution;

-- according to the research conducted by the VUSTE [Engineering Technology and Economic Research Institute], the quality of engineering products is 80 percent determined during the preproduction stage, i.e., in the planning of the construction of engineering products. In our country the production stage is regarded as the most important one and the stages of preparation are underplayed in terms of cadre assignments and rewards. In this conjunction it may be of some interest

to mention that, for instance, in the most prominent enterprises in Japan, the FRG, and other industrial countries all energy of the contractors (i.e., costs, time) is divided roughly so that R & D get 40 percent, production only 20 percent, and marketing operations and services connected with sales again 40 percent;

-- our economy and its overall export efficiency have considerable assets also in the recycling of waste raw materials, scrap, etc. For example, the planned increment in metallurgical production in the GDR is covered almost 100 percent with secondary raw materials alone (recycling); in our country it is no more than 40 percent.

Naturally, in terms of the role of external economic relations in the Czechoslovak economy it is not irrelevant which mechanisms are controlling their development. In this article we are not concerned with a plan or economic, legal and other mechanisms of management, but with the concept of basic pre-conditions for all forms and mechanisms of management, which, in the conditions of socialist economy, is in our view the state monopoly on external economic relations. Its concept and function have been discussed in our country for years and even now various views and lack of clarity on this issue are evident, especially when it concerns state monopoly of foreign trade, which is usually, and quite incorrectly, identified with a substantially broader system.

#### State Monopoly of External Economic Relations

State monopoly of external economic relations represents the sovereign right and duty of the socialist state -- its legislative and executive power -- to conduct, manage, organize and control all economic relations with foreign countries in the interest of all society and to authorize those organs and organizations which are best equipped to conduct individual operations. In this respect the sovereign position of the socialist state is irreplaceable; however, depending on the situation, it can delegate its sovereign right to appropriate state organs and economic organizations.

As a category of socialist relations of production the state monopoly of external economic relations has its economic base in the ownership by all people, its legal base in appropriate legislative norms, and its organizational base in the stipulation of certain organizational and operative procedures by which economic relations with foreign countries are conducted.

The legal foundation of this monopoly is set in two principal laws: Law No 42/1980 of the Legal Code [Sbırka] on economic contacts with foreign countries, and Law No 142/1970 of the Legal Code on the management of foreign currency, supplemented of course by regulations of a lower order. This adjustment dispelled the previous diffusion and insufficiency of the legal foundation and for the first time since 1948 state monopoly of external economic relations was put under one roof.

Certain difficulties in the understanding and interpretation of the essence of state monopoly of external economic relations stem from the fact that this monopoly is externally reflected practically only in the form of its submonopolies.

The submonopolies include:

- foreign trade,
- foreign economic services,
- production and specialization and cooperation in production with foreign countries.
- scientific contacts,
- management of industrial rights,
- foreign currency.

They are precisely defined (but not described in those terms) in both of the above-mentioned laws. Of course, common language does not use the concept of, for instance, submonopoly of foreign trade but rather state monopoly of foreign trade, etc.

It should be mentioned in this context that the radius of action demonstrated by the monopoly of foreign currency is -- as in the case of foreign trade -- as wide as the complex of all factors in the complex of the monopoly of external economic relations, because the monopoly of foreign currency covers all economic inputs and outputs in relation to foreign countries in their foreign currency-financial expression. In a certain sense its effect is even slightly broader than that of the monopoly of foreign trade because it also covers all non-economic forms of relations, for example, diplomatic, sports, cultural contacts, etc.

Monopoly of external economic relations (or its individual submonopolies) performs two basic functions which are the forms expressing the most common functions of the socialist state:

- protective function
- developmental function.

From a more thorough analysis of these functions we can see that both always have their internal and their external aspect, depending on the direction of the effect of the monopoly. Furthermore, one may speak of a differentiated effect of the monopoly in relation to socialist and nonsocialist countries which, however, has not been generally applied in practice thus far, among other things, also because it has not been sufficiently defined by theory. From other problems we select for the purposes of this article a single one, i.e., the problem of delegation.

We chose the problem of delegation because it is narrowly connected with the methods of implementation of the role played by external economic relations in the development of Czechoslovak economy.

Law 42/1980 of the Legal Code authorizes the federal government of the CSSR to act by delegation. By delegation we understand the transfer of authorization to perform certain functions in foreign relations to lower sectors of the management, i.e., from the government to central organs of state administration (for instance, FMZO [Federal Ministry of Foreign Trade], FMTIR [Federal Ministry for Technological and Investment Development], FMF [Federal Ministry of

Finance], etc.) and to the khozrashchet sphere (for example, VHJ, OZO [organizations of foreign trade]), certain institutions (for example, Research Institute for Foreign Trade). Most of the above-mentioned chronic problems in the concept of monopoly continue to appear in the area of delegation.

The heart of the controversy is in the views held by the representatives of the production sphere and of the branches of foreign trade. In simple terms, the former blame the latter for not being able to market advantageously; the latter blame production for being unable to supply adequate amounts of quality products for export. As a result, the demands of production that it be entrusted with "foreign trade," i.e., appropriate export and import operations, are repeated at various intensities. Let the manufacturers sell because the customers will buy what they need. In other words, this controversy concerns the delegation of monopoly authorization. The demands to "take over" foreign trade are neither new nor are they posed generally or unambiguously; the basic problem is concealed under many incorrect interpretations and vagueness on both sides, uncorroborated allegations (for example, that export efficiency will increase substantially if certain demands are granted), notions (for example, about greater flexibility of operations), etc.

In the eyes of economic managers the problem of relations between production and foreign trade is so much more serious because party congresses and plenums of the CPCZ Central Committee traditionally focus attention on it and demand "closer unity of foreign trade with production," higher export efficiency of the Czechoslovak economy, and better commercial operations in organizations of foreign trade.

The most serious shortcoming in the discussion of relations between production and foreign trade and certain extravagant demands on the part of production stems in principle from the separation of economic questions from organizational questions. In our opinion, the union of foreign trade with production cannot be resolved by organizational arrangements alone without resolving the economic union. Adequate organizational adjustments should be sought on the basis of economic interrelation alone. The key question of economic interrelation, which appears desirable, is, in our judgment: a) direct but controlled application of economically substantiated relations of world values in the calculation of enterprises of the Czechoslovak production base, which will lead to economization of wholesale prices; b) more realistic, so-called conversion quotas of the SBCS [Czechoslovak State Bank], i.e., of the coefficient which is the product of the official foreign currency exchange rate of our Kcs and the so-called internal reproduction price adjustment; c) expeditious and very rigorous enforcement of technical-economic parameters, norms, standards, scales of quality, etc. in the sphere of Czechoslovak production, based on the trend-setting development in the most challenging foreign markets.

As is known, experiments by which certain proposals for rapprochement of production with foreign trade have been implemented since January 1983. They will be assessed in 1985 and conclusions will be deduced from them for the following period (for example, experiments concerning the position of broker of some OZO sectors vis-a-vis the production commitment, experiment with new indicators of export efficiency, etc. including organizational adjustments between, or within, several foreign trade organizations).

From the theoretical point of view, as well as according to practice in our country and other CEMA countries (where the relations "production--foreign trade" are resolved in many different ways), neither the state monopoly of external economic relations nor the monopoly of foreign trade may be identified exclusively with a single organ of state administration, for instance, with FMZO, so much less so with a certain enterprise, VHJ, etc. The differentiation of economic contacts with foreign countries and the process of socialist economic integration (for instance, the already outdated requirement of the Comprehensive Program for the development of so-called direct relations of the organs and organizations of the CEMA countries), together with the development of commercial-political relations and international policy, doubtlessly call for gradual adaptation of the monopoly to new conditions. Certain adjustments in the monopoly of foreign trade may be envisaged, for example, in conjunction with the potential membership of a certain VHJ in a future joint economic organization operating as khozrashchet, in which the CEMA countries will join, along the lines of the joint Hungarian-Polish enterprise Haldex. Analogically, delegation of authority to conduct foreign trade operations for a certain VHJ may be considered in exports of large investment units. Each of those cases must preserve the innermost essence of the state monopoly of foreign trade, i.e., the monopoly of Czechoslovak offer and Czechoslovak demand in foreign markets, which will eliminate mutual competition of Czechoslovak organizations, for instance, undercutting of prices in exports.

#### Prospects and Tasks of External Economic Relations to 1990

In 1984-1990 Czechoslovak economy will develop in its external economic relations and in the stage of their implementation by foreign trade under aggravated pressure from its external economic environment, under the influence of the economic development in the countries of the socialist community, in capitalist and developing countries, and thus, in general, in the context of the world economic development. With a latitude that is necessary and permissible when estimating the future development over a period of "only" 6 years, we may anticipate, in the most common terms, that the following factors will come to the fore in the external economic environment of the CSSR:

- a) The world economy will adjust to the changed situation, mainly as concerns the sources of growth. Tensions growing for a long time between natural resources, or their economical acquisition on the one hand, and the demands of economic growth on the other, have faced the world economy with the necessity to exploit natural resources more intensively;
- b) Scientific and technological development will demand changes of technologies and more expeditious modernization of the capacities of production as well as of research and development, for which ways and means will have to be sought and for which preconditions must be created also in the social area;
- c) The general crisis of capitalism will continue and may become more pervasive due to internal controversies in the capitalist world system (growing competition of the three world centers of capitalist industry, i.e., the USA, West Europe and Japan) and, by the same token, due to the consolidation of the position held by the world socialist system and to aggravated economic and political pressures from the developing countries demanding changes of the structure of the world economy and imposition of a new international economic order;

d) Economies with high export capacity, not always directly dependent on sources of raw materials, materials or energy but rather on their adaptability to the structures of demand and comprehensive development of the needs in production and personal consumption, obviously will continue to assert themselves in the world economy. That may further aggravate the trade-political situation in international trade, including those instances where the market may be closed to certain types of goods.

From those and other trends in development it follows for the Czechoslovak economy that the CEMA community will serve as a foundation for our external economic relations and unqualified guarantee of their development. External influences and internal problems of economic growth will affect individual CEMA countries to different degrees; however, it is in the interest of the community and of its individual member states, including the CSSR, to profit jointly from the advantages of socialist economic integration. Despite the difficulties and fluctuations and possibly also a slump in the growth of the countries which used to mark above-average growth, the CEMA countries will become a vital market for products of processing industries and the base for specialization and cooperation. The program of coordination of national economic plans for the 1986-1990 period has created preconditions for production, trade and scientific cooperation of the CSSR with the CEMA countries and for stepped-up process of desirable progressive structural changes and fulfillment of long-range goal-oriented programs.

#### Priority of External Economic Relations

The management of the further development of the Czechoslovak economy must enforce by all means and everywhere the priority of external economic relations, the priority of higher export efficiency of the entire Czechoslovak production and higher efficiency of operations of foreign trade. The Seventh Plenum of the CPCZ Central Committee postulated in November 1982 this demand not only for 1983 but for the whole period of the 1980's. The plenum noted that:

- with great openness of our economy external economic relations predetermined the fundamental national economic proportions of the plan, especially the accumulation and use of national income;
- the chosen way toward gradual restoration of balance in the area of free currency must be consistently followed and Czechoslovak balance of payments vis-a-vis socialist countries must be maintained;
- the share of machine engineering products in the structure of Czechoslovak exports must be increased and, concurrently, the weight of specialization and coordination in machine engineering with the CEMA countries must be enhanced (about 240 bilateral and 60 multilateral agreements in 1983), particularly with the USSR;
- new, modern forms of cooperation with socialist countries in the area of production must be developed, mainly by intensified direct contacts between the branches of production and enterprises, and also by organizing joint enterprises;

-- bilateral and multilateral coordination of economic, scientific, technological and investment policies must reach the level of branches and enterprises;

-- desirable changes in the structure of exports and imports must be enforced in relations with nonsocialist countries (a larger share of machine engineering products in exports and, conversely, lower imports of fuels, energy and metallurgical materials; adaptation of exports of goods manufactured by light industry, particularly textiles, footwear, glass and costume jewelry, to the situation in foreign markets);

-- organizations of foreign trade and production must manifest more initiative in their search for new markets, in innovations and design, be concerned above all about the technical standard and quality of export funds, and provide better accessory services;

-- Czechoslovak imports must be used more effectively in support of Czechoslovak exports, particularly in the form of combined trade, because the amount of invoices for exports will determine the maximum amount of potential imports.

Steps which are aimed at the development of the Set of Measures have the form of attested experiments and are intended to enhance the priority of external economic relations in the Czechoslovak economy, which, naturally, is not self-serving. Those experiments began this year.

The main purpose of the experiments is to intensify the cooperation of organizations of foreign trade with the production sphere and to expand the responsibility of organizations of production for achievements in foreign trade.

Two variants will be tested:

a) economic and organizational interrelations of production and foreign trade, where the OZO or its sector is integrated in VHJ as an enterprise or organizational component of the general directorate; this variant is being tested in the VHJ Sigma in Olomouc, Heavy Current Electrical Engineering Works in Prague, Chirana in Stara Tura, the Heavy Engineering Works in Martin, and Czechoslovak Musical Instruments in Hradec Kralove;

b) economic interconnections of production and foreign trade, where the appropriate trade group of the OZO remains part of that organization; however, abroad it acts on the principle of brokerage (commission) in its behalf on the account of the VHJ; this variant is being tested in the AZNP [Automobile Works National Enterprise] in Mlada Boleslav and in the passenger automobile sales division of the Motokov OZO, in the Tesla VHJ in Brno, with the measuring and laboratory instruments sales division of the Koz OZO, as well as in the Agrozet VHJ in Brno and the Heavy Engineering Works in Martin together with the tractor and agricultural machinery sales division of the Motokov OZO. In these cases the broker's contract has replaced previous agreements on delivery schedule.

Important changes taking place in both types of experiments are designed for more thorough application of the effect in foreign trade of accelerated scientific and technological progress in production, better accessory services, adaptability to the demands of foreign markets, and enforcement of world technical and economic parameters. The state monopoly of foreign trade has been fully preserved.

In addition to these new experiments, the OZO Jablonex, Skloexport [Glass Export] and Czechoslovak Ceramics continue their experiment with production organizations manufacturing export goods mainly from domestic raw materials, i.e., with the Jablonec Costume Jewelry, Crystalex, Sklo-Union [Union Glass] and Karlsbad Porcelain VHJ's. The "effect from exports" expressing the semi-annual increase or decrease of export fco prices minus the stipulated average percentage in case of inflationary rise of foreign prices and corrected by the mobility of the level of Czechoslovak wholesale prices is included above the framework of wholesale prices in calculations of all decisive indicators of the plan and economic incentives. To raise incentives above the margin of the generally valid system of financial economic mechanisms in foreign trade, income in Kcs, which depends on the overfulfillment or nonfulfillment of the planned differences between foreign and domestic prices, is reflected in the economic result and in the method of its distribution. By the same token, the opportunities to assign resources from the assets of the fund for export incentives to the special compensation fund, and in the fund for development and to augment emergency funds, have been expanded. Foreign currency incentives are transferred from the VHJ to the enterprises as the subjects concluding with the OZO contracts for deliveries for export. At the same time, however, the VHJ has the right to pool recognized claims to foreign currency incentives in those cases where it is to the benefit of the development of the whole branch. With regard to the stagnation or even drop in foreign prices and declining prosperity, stimulation of the growth in the volume of exports and foreign prices could not continue. For that reason the semiannual increment of exports introduced as a single title may be replaced in case of zero or negative value with the title of overfulfillment of the planned volume of exports. Furthermore, the application of foreign currency claims will be more restricted.

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How can one summarize the main points of the very next tasks of external economic relations in Czechoslovak economic development during the Seventh 5-Year Plan and until 1990? It may, and must, be done in the light of the decisions announced by the 16th CPCZ Congress and in confrontation with the objective development of the external economic environment of the CSSR and its internal economic situation. By the same token, it must be noted again that external economic relations as such reflect the development of all of the economy, that they mirror primarily the general level of export efficiency, and that they by themselves may only collaborate in the creation of the efficiency and overall intensity of the Czechoslovak economy, for example, by improving the efficiency of commercial operations in foreign trade. The problem of efficiency in external economic relations is above all a problem of efficiency of Czechoslovak production operations complemented by commercial activities of the OZO.

The principal task of external economic relations in the development of the Czechoslovak economy at present and until 1990 may be formulated as a task to improve export efficiency to the highest degree, either directly or by mediation. Actually, this task contains all partial tasks.

1. Efficiency of commercial operations which valorize the results of production in foreign markets must and may be improved entirely directly, without the need of investments or manpower. Efficiency of commercial operations

encompasses a broad scale of export and import operations, starting with research of the demands and survey of the market, price documentation, survey of the competition, etc. and ending with goal-oriented advertising. In a broader sense, organizations of foreign trade must help accelerate the introduction of world scientific and technological knowledge into Czechoslovak production; introduce Czechoslovak manufacturers to new processes of production that are realistic for our situation but that have not been applied before; negotiate optimum volumes of orders and thus make our production enterprises use their capacities more efficiently; increase foreign currency income by improving the delivery with final assembly of the products; upgrade all accessory and independently offered services. Such contributions to higher export efficiency of the Czechoslovak economy may not be crucial, but neither are they irrelevant. It is not immodest to mention that even the members of the office of foreign trade are making their contribution toward the fulfillment of this immediate, continuous task not only by training the cadres but also by cooperating directly with the agencies and organizations of foreign trade in solving some problems.

2. With the help of external economic relations, mainly specialization and cooperation in production, and with the help of the active function of foreign trade and other factors, it is desirable to intensify the participation of the Czechoslovak economy in the international division of labor in the decisive direction, i.e., within the world socialist system and to a given extent, on the worldwide scale, so that the scope of this integration be the same or approach in 1990 the extent to which comparable processing-type economies are integrated. This presupposes already at present the implementation of the outlined measures in order to narrow down the line of products manufactured in the Czechoslovak economy, particularly machinery; the intensification of direct contacts between the ministries and organizations in the CEMA countries; the implementation of long-range agreements on specialization and cooperation with the USSR for the period to 1990 and analogical agreements with other CEMA countries; the fulfillment of long-range goal-oriented programs of cooperation to 1990; the implementation of other measures of bilateral and multilateral integration; the coordination of investment policies with the CEMA countries, and striving for improvement of the economic, legal and organizational mechanisms of specialization and cooperation in production.

3. Objective pressures of world technical and economic parameters and value relations must be used systematically and methodically to reduce excessive requirements of economic and natural resources in the entire process of reproduction, i.e., consumption of raw materials, materials, fuels and energy in production as well as utilization of manpower. The state goal-oriented program "Rationalization of the Consumption and Exploitation of Fuels and Energy" and other similar measures must also be indirectly supported by parametric functions of external economic relations and directly, for example, by imports of modern consumption-reducing technology, by application of information from abroad, and by activation of Czechoslovak licensing policies.

4. On the basis of scientifically verified prognoses and results of economic, technical and technological research studying trends in the development of the needs and demands of our foreign partners and in foreign markets, external

economic relations must help enforce desirable structural changes in Czechoslovak production, which may improve export efficiency of all of Czechoslovak economy, reduce requirements of imported products, and lead to a higher share of exports of goods with superior technical standards. Machine engineering, electrical engineering and electronics, chemistry as well as the development of robotization and other factors of modern technology hold here the key position.

5. Gradual improvement of export efficiency in the Czechoslovak economy calls for utilization of the active function of technical economic criteria in the world market through external economic relations in order to achieve the desirable adaptability of Czechoslovak production, technical standard and quality of export goods. The success of the international rank of the Czechoslovak economy may be measured only by international comparison and in this comparison the prices earned are of crucial significance.

This does not concern only technical or technological parameters of the world market but also world prices based on economy (and not, for instance, on speculation) and their controlled inroads into the Czechoslovak khozrashchet sphere of production, in the interest of comparison of costs and prices and in the interest of further updating of Czechoslovak wholesale prices.

6. External economic relations, i.e., foreign trade, specialization and cooperation in production, scientific contacts, joint ventures, joint procedures in third markets, implementation of joint investment programs, credit and financial relations, production and commercial services and other factors of economic contacts with foreign countries must help intensify as much as possible the process of socialist economic integration which is vital for the successful development of all of Czechoslovak economy, not only until 1990.

7. External economic relations must become the focus of attention in the further development of the planned management system of the Czechoslovak economy in the 1980's and 1990's and of further improvement of the Set of Measures. Representatives of our external economic relations should stress far more emphatically the demand that this area must no longer be regarded as a mere appendix of the national economy but that external economic relations represent one of essential aspects in the planning of state economic policies along the vertical axis of management (especially there) as well as along its horizontal axis. The plan for the development of external economic relations should become the key mechanism in the development of external economic relations and an intrinsic part of the whole system of national economic or, as the case may be, of state plans. The demands and the criteria of the plan of external economic relations should exert fundamental influence on the concept and creation of the entire planned management system and on the systems of other economic, legal and organizational mechanisms of management in practically all of the Czechoslovak economy.

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GRADUAL CHANGES RELATIVE TO ECONOMIC INTENSIFICATION

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[Article by Docent Eng Josef Mervart, CSc, Research Institute for Planning and Management of the National Economy, Prague: "The Process of Intensification of the Economy and the Problem of Managing Its Attendant Gradual Changes"]

[Text] Characteristics of Origins and Tasks of Intensification of the Economy

The identification of suitable approaches to the effective implementation of a long-term policy of the party and of the government, i.e., the attainment of high effectiveness and quality of all labor, focuses on itself and primary attention of economic theory and practice and culminate in specific suggestions for intensification measures on the one hand and in an effort to clarify the theoretical concept and thematic delineation of the intensification process on the other hand. The requisite synthesis and assessment of the results of these studies will have to come to grips with various, even some of the more fundamental, differences of opinion in this area and manage to come up with a more specific characterization of the intensification process.

Numerous approaches to this process conceive of it as a necessary reaction to more substantial changes in the development of some internal and external conditions of economic development, thus complicating the possibilities and prerequisites for providing increments, eventually even maintaining the extant volumes of some important resources, and have interfered in this manner with the potential continuation of existing trends of the so-called extensive development of the economy.

Among these trends that complicate the internal and external conditions for development of the economy belong particularly the following:

--acceleration of the R&D progress with corresponding manifestations and consequences in all phases of the economic renewal process;

--a significant increase in the importance of international cooperation to the effective development of the economy;

- increase in the requisite export equivalent per unit of imports;
- application of various discriminatory measures on the part of capitalist countries in trading with us;
- increase in costs per unit for procurement of domestic sources, particularly fuels;
- increase in the demand of important productions on capital due to R&D and to a complicated price development in investment goods;
- increase in the volume of incurred investments destined for compensating for the negative effects of production on the environment.

Their result detrimentally affected the potential and costs for procurement of many important production sources (fuels, energy, certain raw materials, investment goods, etc.) on the one hand, and the sales potential on foreign markets deteriorated on the other hand. The impact of these unfavorable trends became multiplied by the great dependence of the Czechoslovak economy on imports of liquid and gaseous fuels, metallic ores, textiles and other raw materials and the relatively high demands of the contemporary structure of production on materials and energy. The high consumption volume of more expensive resources increased the share of consumption in production in the generation of net national product and created excessive demands on its use in the area of investments and exports. These trends adversely affected material coverage of personal and social consumption with simultaneously planned gradual increases in wages and salaries, and became manifested in a certain amount of increase in savings by the populace and symptoms of imbalance on the domestic market.

In this situation it was becoming unacceptable to have the continued growth of the economy dependent on adequate increases in the consumption of more expensive resources, specifically in view of the stagnating or even decreasing effectiveness of their utilization and an unsatisfactory measure of their valorization in the process of economic renewal. This then gave rise to the requirement for intensification of the economy interpreted in the mentioned concept mainly as a problem of reducing the specific consumption of resources and increasing their effectiveness.

A certain part of the suggestions intended to solve the mentioned problem consisted in the application of measures having a direct impact, connected with reducing the demands of production on materials and energy. They were based, as a rule, on the fact that the amount of consumed resources to a comparable volume of production or output in our country and abroad shows a substantial difference, to our disadvantage, exemplifying a lower intensity of their utilization. Solutions to the problem of the intensification of the Czechoslovak economy became focused in this concept primarily on the topical need for finding and utilizing expediently attainable savings in the area of inputs of direct and past labor into the economic

renewal process which were oriented toward one or more resource inputs, their specific consumption (quantity), consumption of type (assortment), quality, etc. In keeping with the preceding, there were and are proposed and applied operational measures leading to lowering the specific consumption of raw materials, fuels and energy, toward reducing the measure of investments, control of imports and exports, etc.

The results of these measures, as a rule, produced positive effects, but did not necessarily solve at the same time the causes of the generated problems and--to the extent that they were not a part of preparation and introduction of more principal qualitative changes--they harbored in themselves also a certain amount of risks of potential interference with other intensification processes of the economy. The reason is that their argumentation is often based merely on the results of general macroeconomic comparisons and comparative analyses of, e.g., consumption of resources of identical volumes of various productions\* in our country and in industrially advanced countries.

The quality of informational documentation for orientation in these processes differs in organs of management at different levels which, understandably, also affects the specificity and argumentation of the adopted solutions.

When these suggestions for savings come from higher organs of management, they can be more easily implemented in measures that tend to have a wider impact that could even affect the economy as a whole, but are of a more general (planary) nature. Such generally conceived savings lead to generally stricter conditions for renewal of the production process--with eventual smaller differentiation according to organizational sectors of the national economy. This means that wherever there are unused resources and soft standards of consumption, they are effective. On the other hand, their effective application in areas where there are neither unused resources nor soft standards could have negative effects on maintenance of technological processes and of the desired assortment of turned out products.

In the first 2 years of the Seventh 5-Year Plan it became necessary to cut down on allocation of selected resources through savings measures of the general type. In spite of their positive effects it turned out that on their basis alone it is impossible to arrive at a concept of economic utilization of resources and optimum development of the structure of the national economy satisfactory enough and of a sufficiently long-term nature to facilitate the requisite amount of orientation for preparation of the Eighth and Ninth 5-Year Plans.

For that reason some proposals for this orientation strive to overcome the obvious limitations of planary savings measures and attempt to arrive at a more comprehensive and principal solution to the problem. They are

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\*At the same time there seems to be a lack of systematic consideration of the assortment and quality differences in the compared volumes of resources and products.

thereby based on the assumption that it is imperative to carry out technological and economic analyses of specific productions and to determine not only the current levels of objective standards of consumption, but also the trend of changes caused by planned actions in R&D. On the basis of the results of these analyses a search is on for stimuli and for technoeconomical argumentation for a more pronounced tampering with the linear dependence of production increases on input of resources, specifically at a certain level of its disaggregation. The proposed solutions usually include also the potential for wasteless production and recycling of resources, exploitation of unconventional sources of fuels, energy and raw materials, etc. The obvious viability of these concepts finds application primarily wherever it meets with suitable initiative at lower levels of management for a specific and effective solution of the problem at the microsphere level.

Without this prerequisite, the realistic substance of which cannot be unequivocally accepted, the efforts of higher organs of management encounter complex problems in objective argumentation for norms of consumption under conditions where many subjects of economic activity are undergoing during the course of the planning period changes in quantity, quality and assortment of production and output due to the effects of various R&D projects and as the result of changes in the supply/demand relations.

If the intensity, or extensivity, of economic development is derived from the results of comparing the consumption of individual resources to a certain product, the problem of testing the character of this development assumes the nature of analytical instruments of the type of productive functions. If it were possible reliably to assess the relation of individual factors to the growth in national product--in other words, determine the effect of individual factors on the level of so-called integral productivity--it would be possible to arrive at a relatively precise definition of the intensity, or extensivity, of growth and break it down into terms of optimal, technological and factual efficiency (productivity) of individual resources. In reality, however, there occur distinct differences of opinion and inaccuracies in assessment of the effects of technological progress on the efficiency (productivity) of individual factors and on the concept and significance of a certain residual factor (residue), detrimentally affecting the value of the attained results.

For these reasons the various specific proposals for examining the relations between the manner of allocation of resources and their efficient utilization tend to be oriented rather toward dealing with some partial and more specific tasks, such as, e.g., examining the possibilities and conditions for:

--increasing the measure of utility of products and their parts and the effects of potential improvements on marketing or products abroad and generation of foreign exchange, as well as on improved meeting of domestic needs;

--improving the structure and assortment of production, specifically by expanding viable productions on the one hand and by discontinuing productions that are less effective and pose great demands on resources on the other hand: An integral part of this task is seeking more viable opportunities for purposeful utilization of the international division of labor, particularly within the framework of socialist economic integration, as well as concentrating investment activities into processes connected with the technological modernization of viable productions;

--preventing excessive utilization of natural resources and adverse effects on the human factor and its environment, the reason being that high intensity of utilization of some--even relatively cheap--domestic resources can produce a number of negative effects, the alleviation of which is costly or even impossible.

The approach to the problems of intensification of the economy in this concept accentuates the search for conditions and possibilities for achieving a high measure of effective utilization of resources in all stages of economic renewal. In this context we can recall the complex and multifaceted reaction of producers in industrially advanced countries of Western Europe to the 15-fold increase in crude oil prices from 1974 through 1982 which manifested itself in the course of their process of economic renewal in various ways, specifically:

--in the area of crude oil utilization as fuel, increases in the price of petroleum derivatives led to considerable savings and substitutions in production;

--in some areas of crude oil processing (e.g., synthetic fibers) there occurred curtailment and even discontinuation of production with reliance on importation from oil-producing countries;

--in some sectors of specialized chemistry and in production of goods destined for delivery into viable final productions (e.g., pure chemicals, tires, etc.) there did not occur a reduction, but rather continued increases in production with the trend of expedient application of scientific and technological progress and the corresponding increases in the price of products.

From these and many other cases of the varied effects of steep increases in the price of some natural resources it follows that every price increase need not necessarily result directly in their general savings. This applies particularly to cases (e.g., in precious and nonferrous metals) when it became fully reflected in the prices of finished products and was accompanied by a favorable situation on the buying markets. This points out at the same time the fact that an increase in the prices of natural resources led, as a rule, to finding more suitable and more easily accessible substitutes for them and to more economic technologies of their utilization, as it promoted scientific and technological progress in the given sector.

## Socioeconomic Aspects of Intensification of the Economy

Empirical experience proves that solving the problem of intensification of the economy cannot detract from the sphere of production and social relations and their attendant factors affecting the development of production forces, the type of interests, motivations, organizational responsibility, etc. It turned out at the same time that mastering this task goes beyond the process of continuous improvement of the system of planned management, which occurs continuously on the basis of a critical analysis of partial shortcomings in management and in searching for new, more effective tools of management.

The conceptual solution of this task of intensification of the Czechoslovak economy must bring qualitative changes in the area of parametric and criterial media of the national economy and in the conduct of the managed and managing elements of the economy, where the subjects of economy:

--bear the consequences of their decisionmaking in the area of generation and utilization of resources;

--will not have the opportunity to make up for their shortcomings by debasing the quality of products by speculative changes in their assortment, making adaptations of the plan, etc;

--will be interested in effective utilization of resources and liquidation of stockpiles in excess of the norms, in continuous and intensive utilization of R&D and of international cooperation as well as in participation in foreign trade, etc.;

--will have at their disposal an adequate amount of information regarding trends in the future development of internal and external conditions and the requisite motivation for its purposeful utilization.

At the same time it is turning out that each system of planned management represents for economic policy a certain complex of tools and forms by means of which its objectives and intents can be implemented in a given medium. For that reason the system of management does not provide an independent answer to the question of whence and to where the economy is to develop. In this regard it is subordinated to economic policy and its task is to create realistic prerequisites for its implementation. Thus it creates a situation in which economic policy can concentrate on the strategic solution of key problems of development, while the manner of their specific implementation can be not only centrally predetermined and specified, but their implementation can also be aided by rational behavior of the interested elements of the economy.

The creation of optimal harmony between economic policy and the conditions created by the system of planned management for rational and motivated meeting of the goals and objectives of economic policy represents the key problem in dealing with intensification of the economy. Experience derived

from past development unequivocally shows that each infraction against this harmony becomes manifested in weakened effectiveness of centralized management and can mislead the economy to develop in an undesirable direction. In such a situation, even the best formulated goals and objectives of economic policy cannot be implemented with adequate effectiveness.

Intensification of the economy in this comprehensive concept is a matter for only the central organs of management, but becomes an object of interest and of decisionmaking responsibility for the entire vertical structure of management, all elements of which must timely identify, prepare and implement the requisite viable changes.

The solution of this task must be based on an overall strategy of economic policy in a given period, and its specific detailed breakdown must react to any more pronounced changes in the internal and external conditions for development of the national economy. Thus, it is impossible to envision any possibility for a simple detection and preparation of the implementation of the needed viable changes, but the following must be incorporated into the system of planned management of the national economy:

--organizational prerequisites and the needed stimuli for continuous identification and assessment of proposals for viable changes;

--methodological and organizational principles for the timely solution of decisionmaking tasks connected with selection, preparation and implementation of viable changes at individual levels of management.

In dealing with these tasks, consideration must be given to some complications that became manifested in some extant approaches to their solution and which are constituted by the:

--tremendous number of potential proposals for viable changes in which their degree of maturing from inceptive idea to implementation project for a certain innovation considerably differs, making the possibility of their assessment in their requisite linkages more difficult;

--heterogeneity and wide spectrum of effects of those changes that concern merely the sphere of production, but also the nonproductive sphere, the environment, external relations, etc., and can change also the basic concepts of implementation in the primary, secondary and tertiary sphere;

--difficulty of selecting such criteria for making effective changes that would impact not only on the partial economic contributions of their application, but also their assessment within the framework of overall development of the national economy and would help in this respect to differentiate between real and fictive effects;

--inadequate degree of activity of lower levels of management and of managed elements of the economy in the area of detection, national economy testing and expedient application of the selected changes.

#### Intensive Development as a General Principle of Socialist Management

A brief outline of the known intensification tasks in the planned development of a socialist economy makes it possible to reach the significant conclusion that they were actually known under various designations already in the period of the so-called extensive development of the economy, but their resolution did not appear to be too pressing.

A logical part of this conclusion is the contention that the problem of intensification of the Czechoslovak economy should not be interpreted principally as a special task occurring at a certain stage of development of the national economy, marked by worsening of some economic conditions (primarily reduced availability or increased price of important production resources), but that it involves a constant, variably modified task of economic utilization and effective valorization of resources throughout the economic renewal process. Its solution has a common basis, but a number of modifications, corresponding to the changing conditions and tasks of development of the national economy in various stages of its development. Discerning of partial objectives of this task and suitable approaches to their solution does not lend itself in this concept to a general and one-time resolution, but calls for constant attention of the management sphere as well as that of economic theory.

If intensive development of the national economy is interpreted as a continuous problem, the solution of which depends on constant modification of conditions under which this development occurs and on the overall strategy of development at a given stage, then it is impossible to envision the possibility for simple detection and implementation of the requisite viable changes. On the contrary, there is a need for incorporating into the system of planned management of the national economy a process of constant identification, selection and effective implementation of the requisite viable changes, specifically from the progress of work on prognoses and long-term outlook down to operational measures in routine decisionmaking processes.

#### The Problem of Delineation, Specification and Selection of Gradual Changes

Gradual changes are to be interpreted as heterogeneous and variably significant reversals in ongoing development which change the quality and often also the quantity of certain phenomena or activities, producing gradual effects in the area of intensification of the national economy and its overall effectiveness. During the period of scientific and technological revolution there occurs a sharp increase in the frequency of potential possibilities for gradual changes and of the manner of their utilization, which together with increased pressure on intensification of the economy brings about the problem of constant identification, selection, preparation and implementation of these changes.

A logical starting point for dealing with this problem is the analysis of those significant problematic situations in the national economy which were identified in prognostic and analytical documentation and in preliminary conceptual considerations regarding possible future development of the national economy.

In the procedures used to date in work on prognoses and long-term outlook there have appeared various attempts at the purposeful delineation and arrangement of problem areas in which directions and objectives of future development are sought and tested, to include proposals for the requisite gradual changes. Some of them strove for as complete a reflection of the problems of the national economy as possible, while others were selective and concentrated their attention on key problems of continued development. Among these selective approaches belongs also the current delineation of six problem areas and of six panels for devising thematically oriented directives for continued development of the Czechoslovak economy until the year 1995. At the same time it is turning out that the proposals for gradual changes identified in these areas and panels represent only a certain part of the proposed solutions to the problems. Their degree of discernment or specificity can differ considerably, so that their form may range from that of a general inventive idea to a worked-out plan for specific application. It appears at the same time that R&D can work out a proposal for a gradual change only up to a certain level, while subsequent proceedings call for participation of the users and implementation sphere. This experience was confirmed during several years' attempts at mastering the broadly based problems of the type of electronization, cybernetization, chemization and biologization of the economy and, as such, is a wider validity.

For that reason the manner of identification, preparation and implementation of gradual changes should be based on careful methodological and organizational preparation which is currently undergoing preparation as part of a system of permanent prognostic studies under central coordination by the Czechoslovak Academy of Sciences.

A logical consequence of such a wide array of methodically and organizationally provided studies is a situation where the number of proposals for various innovative changes substantially increases and comes into a constantly increasing conflict with the absorptive properties of the economy. The problem of economic assessment and selection of gradual changes, however, cannot be dealt with only in the sphere of research and, as a rule, even that of development, but only in more specific conceptual considerations based on documentation regarding the manner of development of the national economy, its sections and cross-sections. Among them belong preliminary deliberations regarding the dimensions and chronological progress of implementation, its territorial distribution, resources connected with preparation and implementation and the envisioned socioeconomic effects. From the aforementioned it follows that unequivocal proof for the adoption or rejection of individual gradual changes cannot be only their argued technical level or a partial consideration of economic

effectiveness based on principles of the relations of costs and effects and in constant prices, but a wider national economic consideration of the contributions and roles of each change in the continued development of the national economy, or its sections (cross-sections), specifically at a given stage of the intensification process.

#### Planned Management of Preparation and Implementation of Gradual Changes

Differences in the effects, extent and scope of gradual changes are constituted by differing demands on their handling. From this viewpoint it is expedient to differentiate between the following three sharply delineated types of gradual changes:

- a) changes based on new scientific findings and significant because of their innovative quality and pronounced effects on the development of the national economy;
- b) changes connected to demands on a certain manner of utilization of a considerable volume of resources;
- c) numerous smaller gradual changes in technology, products and outputs, the preparation and implementation of which require extraordinary concentration of R&D and production capacities and resources.

Experience shows that central organs of management can effectively implement only that part of gradual changes which are of priority importance and pose higher demands on resource and organizational management (a, b). Their effects on preparation and implementation of topical changes (c) can be implemented by less intensive methods and means.

Gradual changes which are to be centrally managed are incorporated into the state plan, specifically as:

--obligatory tasks in capital construction or specific tasks in production and deliveries,

--selected R&D tasks,

--programs (state goal-oriented programs for the Seventh 5-Year Plan).

In addition, the state plan, as the basic tool for implementation of state economy, social and R&D policy, provides orientation and sets the schedule for preparation and implementation of many additional changes that become subject to control by lower management organs. The solution of this task is indisputably an integral part of the management of VHJ's [economic production units] and enterprises which have at their disposal the requisite informational documentation as well as resource capacities and can handle the problem of the frequency and multifaceted nature of these changes within the sphere of their jurisdiction. At the present time there is a need for seeking ways of promoting the initiative and interest of enterprises and of VHJ's in this area that consist essentially of two approaches:

1. Strengthening and more intensive utilization of adequate stimulative and motivational measures as part of improving the system of planned management of the national economy. This specifically means applying in this system suitable measures in the sphere of wages, finance, credit and pricing which then generate the requisite stimulation and initiative for innovation at the enterprise and median level of management;
2. Affecting and monitoring certain symptoms and effects of these progressive changes which can be represented in specific indicators and norms.

Opinions regarding the generation of a demanding criterial medium in the economy are far from uniform for the time being. Some approaches accentuate the significance of assessment and normative designation of key properties of products or outputs in various types of management organs, while others connect its generation with differently interpreted competitive mechanisms, as a rule including pressure of various relaxations of imports.

The assessment of key properties of gradual changes and determination of requirements on their level and development, carried out through the previously described procedures and measures, represent a significant type of control and, in part, also initiation and channelling of innovative activities of enterprises and VHJ's. In addition, some of them also fulfill the important task of protecting the interests of consumers and of the environment.

In addition to the unquestionably positive results, it ought to be pointed out, however, that the effect of these measures is not sufficient for generating the requisite, demanding criterial setting for the Czechoslovak economy and is, in addition, weakened by their limited scope and the granting of exemptions.

It follows from the above that the problem relevant to an approach to the effective introduction of a strict criterial setting in the socialist economy has not been satisfactorily solved for the time being, a fact which becomes reflected in the type of conduct and performance of managerial functions in economic elements. These functions are concentrated primarily in the area of meeting the obligatory plan indicators, quantitative and qualitative characteristics ensuring primarily from plan specifications for the vertical structure of management.

The former is for the most part subsequently followed up by the mentioned assessment of key properties of products, eventually also of outputs in various types of testing facilities (eventually by means of other measures) which force the enterprises to meet plans within a certain scope of demands on the utilitarian properties of products, if they do not want to become subject to various punitive measures in the spheres of prices and material incentives.

A more far-reaching change in the area of criterial setting should, on the other hand, induce enterprises constantly to look ahead in time for ways and means of adapting their behavior to expected changes in marketing conditions, or to ways of influencing those conditions. Performance of a managerial function would then be continuously enriched by a special innovative function which in this concept cannot be interpreted as a function for a single person or organ, but as an immanent component of socialist management. At the same time there arises the question of whether its wider development is tied to upgrading the strictness of the subsequent control of the quality of the delivered goods and outputs, or whether it calls for the creation of yet other prerequisites, particularly in situations where enterprises and VHJ's experience the consequences of their decisionmaking in the area of the material position of their organization.

It is particularly in this direction that it would be advisable to promote further research of the problem of gradual changes and look for effective stimuli, instruments and mechanisms by means of which it would be possible to provide for requisite development of the function of innovator and socialist entrepreneur within the vertical structure of management, providing for economic and effective utilization of resources throughout the entire process of economic renewal.

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CZECHOSLOVAKIA

EXPERIMENTAL MEASUREMENT OF NEW PLANNED MANAGEMENT ELEMENTS

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[Article by Eng Vaclav Filip, Governmental Council for Problems of Planned Management of the National Economy: "Experimental Verification of New Elements of Planned Management"]

[Text] During approval proceedings for the Set of Measures for Improving the Planned Management System of National Economy after 1980 its further intensification in the area of technological development, capital construction and external relations was envisioned. In 1983 it conducted experimental verification of measures for the establishment of an investment fund and for improving the effectiveness of foreign economic relations and, in the course of the year, it is envisioned to supplement these experiments by measures for accelerating R&D progress.

This involves economic experiments in those areas of the process of economic renewal which from the viewpoint of the effects of the Set of Measures are characterized by their long-term nature. They do not have the character of the comprehensive experiment going back to 1978-1980 (KEREK), but concern the most important areas of the economy (technological development, capital construction, foreign trade). They will be based on the tasks of the Seventh 5-Year Plan for the years 1983-1985 for which a transition will be effected to the new conditions meeting the approved rules for experiments (CSSR Government Resolution No 1/83). Transition of the plan for 1983 to the new conditions has already been carried out by the relevant VHJ's [economic production units] and central organs, and an independent instruction will be issued by the SPK [State Planning Commission] for the years 1984-1985.

What is monitored by the experiments and what are their key objectives?

Measures in the area of technological development are designed to:

--promote the interest of producers toward implementing R&D results in production through a system of graduated prices;

--provide support for macrostructural changes (e.g., development of the electrotechnical industry as a progress-oriented sector) by achieving

harmony between the interest of the society and the interests of the producing VHJ's and enterprises by means of a system of dual prices and by allocations from the state budget;

--overcome the contemporary barriers to the process seeking to eliminate leveling in remuneration by increased motivation of significant creative technical personnel;

--strengthen the role of the 5-year plan by deleting the annual plan for technological development, with the proviso that the 5-year plan will be merely supplemented in implementation plans;

--improve the relations between preferential pricing of technically advanced products as well as fashion and luxury products in favor of the technically advanced products by changes in the intensity of allocations to incentive funds;

--provide preventive measures against any interest in achieving short-term beneficial economic results at the expense of the requirement for a prospective and viable development of VHJ's and enterprises by requiring an obligatory long-term development fund, making it impossible to achieve "savings" in technological development.

These objectives are implemented by experiment in the form of the following specific rules in planning and economic instruments:

In the area of planning the focus is on indicators characterizing the technoeconomic level of production. The starting point is provided by the fact that the measure of application of R&D progress must be assessed primarily on the basis of the overall effectiveness of the economic renewal process. The rules specify, on the one hand, expression of the contributions of technological development in profit and, on the other hand, indicators of specific consumption of fuels, energy, metals, and eventually other materials. These indicators are binding to a greater extent and tied to them is the system of material incentives.

--In the case of the profit indicator the possibility for analyzing the factors on the basis of which profit is planned and actually generated will be verified;

--The role of the 5-year plan of technological development for the period 1983-85 is upgraded in that annual implementation plans will be submitted only in a narrowed down concept (supplements or inevitable changes in the 5-year plan);

--The role of organs responsible for the incorporation of tasks into the plan of technological development is reinforced by the fact that adversary proceedings will be allowed only in cases when the responsible organs consider them to be warranted;

--Norms for the generation of a fund of technological development are introduced at the level determined by the 5-year plan. Their purpose is, on the one hand, to provide sufficient financial resources for technological development and, on the other hand, to act as a preventive measure against achieving undesirable savings in expenditures for new technology (with the intent of achieving higher profits);

--In the interest of improving the efficiency of planning, it is allowed to deal with minor tasks outside of the plan for technological development and cover them from common production costs.

In the area of organizational and economic linkage of research with production there are provided overall directions which generalize the experiences gained by us as well as other socialist countries in organizing the industrial technological base, establishing of production research units within VHJ's, etc. The relevant sectoral central organs and VHJ's are charged with developing them into detailed rules.

The experiment promotes the interest of producers and users in the expedient introduction of R&D results into production by expansion of graduated prices, which are higher at the stage of production start-up and then keep gradually decreasing (covering the increased costs of the initial period of new production). Application will also be made of the system of dual prices (higher for producers and lower for customers) in cases that involve structural changes that are of interest to the society as a whole and, for that reason, the price difference will be covered from the state budget. Furthermore, in the pricing sphere there will be a change in the proportions between price incentives for technically advanced products and fashion and luxury products in favor of technically advanced products.

In the area of promotion of a system of collective and individual material incentives the active role of the incentive component of wages for a selected circle of personnel in the sphere of R&D (research and developmental personnel, designers, planners and other personnel in production states) is primarily stressed.

Instead of regular performance bonuses, personnel in preproduction stages will be receiving bonuses for solution or implementation of scientific and technological developmental tasks. The bonus for each task will be determined ahead of time in an absolute amount which will be clearly differentiated in accordance with its demanding nature, complexity and techneconomic contribution. It is obligatorily stipulated that bonuses for tasks attendant to the development of science and technology must be of a higher level than bonuses provided for personnel in comparable functions along the production and management axis. For a particularly successful solution or implementation of a task, organizations can provide extraordinary bonuses to personnel who shared in the accomplishment. Their amount is unlimited. In appreciation of particularly good results, the relevant minister can additionally authorize another extraordinary bonus

for the most successful individuals (Kcs 5,000 to 50,000) from resources which are specially earmarked for this purpose. It can be received not only by creative personnel, but also by personnel charged with management of efforts on tasks attendant to the development of science and technology and their implementation.

Among the indicators for granting annual bonuses to leading personnel indicators characterizing the technoeconomical level of production are being included. To the meeting of the former is also tied the granting of premiums and bonuses to all personnel engaged in tasks relevant to the development of science and technology if they do not qualify for bonuses for the solution or implementation of individual tasks.

In the area of basic wages a tariff class rating higher by one grade can be granted to personnel who are systematically charged with carrying out complex and demanding tasks and achieve constantly good work results. In addition, personnel in the area of technological development can be assigned basic wages so that their level is on the average higher than that of other personnel in comparable functions. Qualified creative personnel who achieve constantly good work results can be assigned a basic wage level up to 10 percent in excess of the upper limit of the wage range in the given class. In addition to these ways of showing appreciation to personnel in research, development, design, planning, technological preparation and technological development, it is also envisioned to grant, on the basis of a decision by the relevant minister, a special personal payment to top creative technological personnel of up to Kcs 7,500 a month. The experiment affects organizations of the Federal Ministries of Metallurgy and Heavy Machine Building, General Machine Building, Energy and Fuels, and the CSR and SSR Ministries of Industry.

The experiment in the area of capital construction is implemented by means of an investment fund and it pursues the following objectives:

--to promote khozraschet [cost accounting system] in capital construction by greater dependence of investments on the attained economic results by means of fiscal norms tied to the total volume of investment construction;

--to promote the economic interest of VHJ's and enterprises in savings of budgetary costs of construction projects by transferring the saved costs to the credit of SZNR [machinery and equipment not included in the budget];

--to support limitations on launching new construction projects and, thus, improve at the same time the structure of fixed assets by transfer of free financial means to the credit of SZNR.

The mentioned objectives are put into concrete form in the rules for the experiment in the following manner:

The investment fund will replace the existing development and capital formation funds and, in accordance with khozraschet principles, will be used to finance all investments of economic organizations. In this manner their own resources will also be used to cover all shortfalls in capital construction, such as increases in budgetary expenses, prolongation of construction deadlines, and others. The concept of the fund is based on the concept of the existing development fund which was generally introduced by the Set of Measures for financing construction projects of up to Kcs 2 million in budgetary costs as well as machinery and equipment not included in the budget for construction projects.

The investment fund will be generated from profit and write-offs on the basis of norms that will be determined later. Another source can be bank credit; however, it will not automatically make up for a shortage of own financial resources. In addition, the fund can be generated also by means of the so-called supranormative allocations stemming from the rules governing export incentives, preferential pricing, revolving fund reductions and some other sources.

The current categorization of investments for construction projects of up to Kcs 2 million of budgeted costs and in excess of Kcs 2 million of budgeted costs remains unchanged, with the proviso that actual savings achieved in completed construction projects in excess of Kcs 2 million can be used for financing of any type of investments.

This investment fund was established in all production organizations of the Ministry of Machine Building, Ministry of Electrotechnical Industry, the CSR and SSR Ministries of Industry and organizations experimenting with linkage of production to foreign trade.

The experiment in the area of foreign relations pursues the following goals and objectives:

--to promote the responsibility and interest of production in foreign trade results (achieving a higher technical level of production, improving service, delivery of spare parts, commercial efforts); this involves a closer linkage between internal economy and external economic relations on the basis of a contract (as a rule of a procurement type) between VHJ and a business group of the foreign trade organizations;

--closer economic linkage between production and foreign trade organizations (in the area of fiscal, economic and price instruments, wage control, taking over storage facilities and export claims by the producer, etc.) to achieve a higher measure of interest in better foreign trade results with a simultaneous impact also of negative results on production (up to now only positive impact could do so).

These goals and objectives are put into concrete form in planning, in the system of material incentives and in organization.

The approved principles applying to interlinkage between production and foreign trade organizations come in two variants:

--economic and organizational linkage between production and foreign trade activities in which a foreign trade organization or its part becomes incorporated into the VHJ as an enterprise or as an organizational component of general management;

--economic linkage between production and foreign trade activities in which the relevant business group remains organizationally a part of the foreign trade organization, acts abroad in its name, but on behalf and at the expense of the VHJ. Relations between the business organization and the VHJ are arranged to fit the specific conditions. The general manager of the VHJ influences in a specified manner the nomination of the business group manager. The rules deal in detail with the duties and obligations of the business group manager toward the general manager of the VHJ as well as toward the manager of the foreign trade organization.

A basic change occurs in the system of plan indicators, particularly with regard to exports. It is motivated by an endeavor to generate economic pressure and, through it, the interest of our organizations in increasing not only the volume, but particularly the effectiveness of exports and the actual collection of foreign exchange (by achieving higher foreign prices, purposeful limitation of the extent of credit extended to foreign customers, particularly if it involves below-average interest rates, giving preference to prompt payment). To this end serve the introduced indicators of foreign exchange collections, share of imports in foreign exchange collections, etc.

A new provision stipulates that the export task is met by the producing organization only after the exported goods have crossed the Czechoslovak border and not, as was the case up to now, merely by delivering the goods to the storage facility of the foreign trade organization.

The objective of effecting a transition from indicators of material exports to foreign exchange collections, and/or exports in "all charges paid" prices and channeling of imports on the basis of these indicators, will be applied only in relation to nonsocialist countries. These same principles cannot be used in relation to socialist countries because other rules apply to foreign economic relations within CEMA.

Prices achieved in exports for credit in excess of 1 year are converted to prices corresponding to prompt payment by subtracting the export credit interest included in those prices. This eliminates distortion of the effectiveness of such exports.

Economic results of foreign trade (profit or loss) are projected into indicators of overall economic results of production organizations, to which are tied the mutual interests of production and of foreign trade organizations.

Rules for dividing combined profit will replace the previously applied fiscal economic instruments in foreign trade.

In exceptional economically justified cases, an allocation from the state budget can be granted to cover losses from foreign trade in accordance with previously promulgated rules. These allocations will call for working out a program for improving the effectiveness of exports to motivate higher efficiency.

The level of wage funds of VHJ's and enterprises is delineated by a norm which specifies their share in adjusted value added. However, meeting of adjusted value added--which forms the basis for computation of the planned volume of wage funds--is increased or reduced by the result achieved in foreign trade. In some cases the superior organ can stipulate for a VHJ an absolute limit on the volume of wage funds in lieu of the norm, with the proviso that it will be increased or decreased depending on the amount of combined profit (from wholesale prices and from foreign trade). The rules at the same time set the limit for the highest possible reduction of the planned volume of wage funds at 7.5 percent.

The rules for adjusting wage funds and setting premiums for personnel of foreign trade organizations (resulting from economic linkage with production) are based on criteria identical to those applied in production organizations (profit from foreign trade, foreign exchange collections, etc.).

The experiment is implemented depending on the readiness of the relevant production and foreign trade organizations and the potential for creating the requisite conditions for its application. It was introduced as of 1 January 1983 in the following VHJ's and OZO's [foreign trade organizations]:

--in organizations which were already authorized to engage in foreign trade in the sphere of exports, being supplemented by an authorization to engage in imports. This then represents economic and organizational linkage of production and foreign trade activities. It involves the VHJ Sigma in Olomouc, Heavy Machine Building Plants in Martin, Heavy-Current Electro-technical Plants in Prague, Chirana in Stara Tura and the Czechoslovak Musical Instruments in Hradec Kralove;

--in organizations where economic linkage will be established between production organizations and the relevant business group. This involves the Automobile Plants in Mlada Boleslav and the passenger car combine OZO Motokov, Agrozet in Brno and the Heavy Machine Building Plants in Martin and the tractor and agricultural machinery combines OZO Motokov and Tesla in Brno and the measuring and laboratory instruments combine OZO Kovo.

The specified forms of the experiment pursue the objective of contributing to further improvements in the system of management toward improved effectiveness in all areas of key importance from the viewpoint of the national economy. Even though the rules and instruments of the experiment by themselves are unable to achieve the desired improved effectiveness without the human factor, they still can be of effective help in this process.

GERMAN DEMOCRATIC REPUBLIC

SED OFFICIAL ON NEED FOR CHANGES TO PROMOTE ECONOMIC FLEXIBILITY

East Berlin EINHEIT in German Vol 38 No 8, Aug 83 (signed to press 13 Jul 83)  
pp 719-724

[Article by Prof Dr Otto Reinhold, member, SED Central Committee; rector, SED Central Committee Academy for Social Sciences; member, GDR Academy of Sciences; corresponding member, USSR Academy of Sciences; and member, EINHEIT editorial board: "Intensively Expanded Reproduction: Revolutionary Process"]

[Text] Socialism, as Marxism-Leninism takes for granted, is a society undergoing dynamic development. As Marx and Engels explained, socialism "is not given for once and for all but must be conceived, as all other social circumstances, as being in constant flux and transformation."\* As Lenin added later, with setting up the socialist society, its actual development only begins in the full sense.

The classic Marxist-Leninist authors proved as indispensable for the transition to socialism the public ownership in the means of production, the leadership role of the workers class and the dictatorship of the proletariat. However, they never had the primitive notion, which bourgeois ideologues have long sought to attribute to us, that socialism would emerge all complete, overnight, as it were, merely by dint of the political power of the workers class and by creating the public ownership in the means of production. Rather, the new power and property relations are the political and economic foundation on which the new society can be erected, step by step.

Practical experience with socialist construction has fully corroborated that significant theoretical insight. The conception of the developed socialist society is the theoretical generalization of all that experience. It takes for granted that after the foundations of socialism are laid a lengthy historic time frame is needed till all essential characteristics and advantages of the socialist society are formed. That is why the SED Program makes the point that the continued shaping of the developed socialist society is a process of fundamental changes in all sectors of public life. The centerpiece is the rapid and steady development of the productive forces, causing the all-inclusive transition to intensively expanded reproduction all through the entire economy.

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\*Engels to Otto v. Boenigk, Marx/Engels, "Werke" (Works), Vol 37, Dietz publishing house, Berlin, 1967, p 447.

## The Meaning of Intensification

The rapid development of the productive forces that is needed can be accomplished only if the socialist production relations are at the same time perfected and developed steadily. It has become perfectly clear that the, principally, intensively expanded reproduction cannot be coped with by the same organizational structure of the economy and the same planning and management methods as a, principally, extensively expanded reproduction. That becomes clear as soon as we take into account but a few facts and requirements. If intensification is not to be confined to some sectors or to a few years but is to be made to prevail as a type of economic development, this can only be done by constantly updating products, procedures and technologies. Intensively expanded reproduction conforms to permanent rationalization at large dimensions.

Intensively expanded reproduction calls for very different proportions between the chief sectors and the basic processes in the economy. Extensively expanded reproduction means that industrial commodity production grows faster than labor productivity. Intensively expanded reproduction, in contrast, requires that labor productivity grow faster. Extensively expanded reproduction has to do with the production consumption, the capital assets expenditures or investments growing at the same speed or, normally, faster than industrial commodity production. Intensively expanded reproduction, in contrast, requires that industrial commodity production together with economic efficiency grow faster. Implied in the intensification process is the condition that for every Mark spent in research an ever increasing growth in effectiveness, efficiency and foreign exchange revenue be achieved.

Even by looking merely at these few economic functions it becomes clear that they can be made to prevail over the long run only if we ensure high speed in scientific-technical progress and an optimum economic efficiency in it. Flexible and dynamic change in economic structure also becomes imperative for it. The key point is a particularly fast development for those branches that altogether determine the intensification tempo. That includes today primarily microelectronics, robot technology, refinement techniques for fuels, chemistry and metallurgy, a corresponding development in producing high-grade consumer goods and the requisite infrastructure adaptation in the economy and so forth.

It is understood that not only the material-technical base of the economy and the production structure are affected by such dynamics but that it also requires an optimum commitment of labor. Higher efficiency, for all that, is inseparable from constant changes. More employment on the one side necessarily leads to cutbacks on the other. The most important economic precondition for it lies in a high labor productivity growth rate.

This intensification process brings with it, of course, a change in public relations, in the substance and nature of labor and in the requirements placed on the working people's qualification level. Of special importance for it is the collaboration of the workers class and the class of the cooperative farmers with the intelligentsia and the change in the relation between mental and physical work.

A policy that is wholly aimed at the well-being of the people, the workers class and all working people, must of course take into account that the material and intellectual-cultural needs are subject not only to quantitative growth but also to qualitative change processes. Ensuring and further elevating, step by step, the working people's standard of living attained cannot be done today and tomorrow in the same manner as 10 or 20 years ago.

These few facts mainly are to underscore an important fact and realization: The growing dynamics in economic and social development is primarily due to the nature of socialist society itself. More than in any previous form of society, in socialism this change process is a basic condition for making its advantages fully effective. This process of upward development also is the condition for that the communist goal can ultimately be reached. Economic and social standstill is incompatible with the nature of socialism. The shaping of the developed socialist society therefore mainly is the shaping of this dynamic economic and social development process. This underlines that socialism in its essence is in every respect a society of the innovators and is more open than any other order to new insights and conclusions on behalf of the upward development of socialist society.

Imperialist ideologues keep reiterating that real socialism of today is mainly oriented to strengthening and preserving what it has achieved and not to change. Therefore the socialist countries had long lost the revolutionary character of their order. For one thing, it is quite peculiar that imperialist ideologues want to determine what is revolutionary in socialism. In that they of course apply the criteria dictated by the class interests of monopoly capital. As practical experience demonstrates, they are frantically looking for some processes and events in the socialist countries that might form buds or handles for a regression toward capitalism. That alone is "revolutionary" to them. To us, the strength and stability of our order are inseparable from the further dynamic growth, the further development of its socialist character.

Looked at from that vantage point, the all-inclusive transition to an intensively expanded reproduction is the most important, complicated and revolutionary task to be solved second to laying the foundations of socialism within our society. This transition to an intensively expanded reproduction, this fundamental change in our economy, is the most important condition for the present and future strength and stability of socialism. Some capitalist countries and corporations undoubtedly are economically highly efficient. But we are intent on carrying out the intensification process for the good of the working people and making it inseparable from social progress, from extending social security and solving other fundamental social and societal problems. Except for socialist countries, nowhere in the world and in history has such a task ever been posed, let alone solved. Important as the transition to intensively expanded reproduction is, though, it is never a self-contained process, detached from overall social development. It is embedded in every respect within the shaping of all sectors of public life. Its advance today is primarily determined by the speed and efficiency of intensification; yet the level of intensification can never be higher than the conditions existing in all the public sectors--from science and education, public relations, all the way to the state of awareness and the attitude of all working people.

## The Pervasive Influence of the Scientific-Technical Revolution

The further shaping of developed socialism in general and the transition to an intensively expanded reproduction in particular are essentially conditioned of course by the scientific-technical revolution and by international development and especially by the bitter struggle between socialism and imperialism at a global scale. The 10th SED Congress therefore called for a higher level of combining socialism's advantages with the the scientific-technical revolution. In all that we always proceed from the realization that scientific-technical progress is no end in itself to us but is used as a crucial means for making the advantages of socialism fully effective. That goal also determines the criteria in this sector--the high demands placed on economic efficiency as well as the social requirements that are inseparable from them. To socialism, a course of scientific-technical progress would be inconceivable that would go hand in hand with reduced social security for the working people, mass unemployment and a drop in the material and cultural standard of living. Therefore it is an essential part of socialist society that the free development of the productive forces Marx asked for becomes inseparable from dynamic development, from a constant perfection in all other public sectors.

In many respects the current scientific-technical revolution only makes possible the all-inclusive transition to an intensively expanded reproduction. Without its effective use it is hardly conceivable how increased production and economic efficiency, with expenses dropping, could be achieved over the long run. If the GDR wants to maintain its international position, it must enforce the tempo dictated by the scientific-technical revolution. Practical experience has shown that this tempo has speeded up much in recent years and will certainly accelerate further. And there are particularly four points that come to the fore in this.

First, the tempo in which new data, procedures and technologies are developed and applied has increased.

Second, the speed in which new procedures and technologies are disseminated has greatly increased. Only remember that not until 1972 microprocessors were first offered for sale in the nonmilitary sector. Within the shortest period, they would then be used in almost all economic and other sectors. It has been similar with industrial robots. How fast, in what time frame, new data can massively, broadly and effectively be used has become a crucial condition for economic efficiency.

Third, scientific-technical progress has greatly increased economic efficiency. Only look at the input/output ratio. Especially microelectronics has brought a fundamental change in this respect.

Fourth, the offer of new products with new intrinsic values and higher economic efficiency has become the most important form of competition on the world markets. He who puts a new product on the market not only makes large extra profits but also can conquer important international positions. All "straggling" on the international market immediately worsens the cost/benefit ratio.

Given today's experiences, one may assume that only those who update at least from 20 to 30 percent of their products annually can ensure their positions and achieve high economic efficiency. That average, sure enough, is a figure that holds today. Some branches need a much higher updating rate. It is also probable that it is going to rise further in the 1980's.

If we analyze the international conflict between socialism and imperialism, it becomes apparent that the struggle for scientific-technical progress is a key issue. An important spot in the economic warfare by the especially aggressive U.S. imperialist forces goes to their intention to exclude the Soviet Union and other socialist countries from the international division of labor in modern science and technology. The success or failure of such intention will more and more depend essentially, however, on what achievements the socialist countries can bring into this division of labor and exchange.

In summary one may say that the dynamic development of science and technology, of the economy and the society as such, is an essential feature of socialist society. Its stable and successful development largely depends on controlling and consciously and systematically planning that dynamics.

It is in line with the fundamental insights of dialectical materialism that this process of "basic changes" can be no smooth process, always marked by full harmony. It is in conformity with the nature of such dynamics that problems that are unforeseeable, tasks that cannot always be resolved right away and various contradictions surface in the course of it.

It turns out of course that old economic management and planning forms come to contradict new demands of an intensively expanded reproduction and must thus be further developed and perfected step by step. The forms of material incentive were long oriented to quantitative growth. Yet now we have to place qualitative growth, efficiency, in the center to ensure volume growth.

#### The Party's Growing Leadership Role

Sometimes the idea of a stable socialist order is conceived as holding on to the old without change. Realizing that the shaping of the developed socialist society in general and the transition to an intensively expanded reproduction in particular is a deeply revolutionary process, it implies that this process can objectively not proceed without contradiction. But these are nonantagonistic contradictions within the scope of socialist society. The effort to surmount them constitutes an exceptionally important impulse, a source for great creative achievements. The successful implementation of the economic and social policy in recent years proves that the SED has shown itself able to use it as an impulse for economic and social development.

The growing role of the Marxist-Leninist party in shaping the developed socialist society is closely linked with the dynamics in the overall process. It is logical and inevitable that the demands made on the party's leadership role become all the greater, the more comprehensively the change of process emphasized in the party program takes shape in practice.

Then, evidently, a number of special requirements come to the fore.

First this involves the ability to spot new conditions and tasks in good time and draw the necessary conclusions in rapidly and flexibly reacting to them. That in a world full of dynamics and also of contradictions new conditions constantly arise is perfectly normal and not astonishing. Comrade Erich Honecker has pointed out repeatedly that we cannot choose the world in which we have to shape the developed socialist society--the world is as it is, as it changes and develops. What is decisive is the ability to draw the necessary conclusions at the right time.

The SED has provided the practical evidence for having that ability. That is evident in the 10th party congress resolutions on the economic strategy for the 1980's, in the energy policy, the science policy, the fast development of micro-electronics and robot technology, the forming of the combines and the further shaping of economic management and planning, and in many other fields.

Second, it is among the political platitudes that a correct conclusion, a correct strategy gets its practical significance and effectiveness only when most of the working people are committed to its active implementation. There is no hyperbole in stating that the active, creative participation of all working people in the transition to an intensively expanded reproduction, especially in enforcing the requisite dynamics, receives a new place value.

By looking merely at a few facts, that conclusion becomes perfectly clear. Our scientific-technical progress and its effective economic utilization have become the main source of economic growth. Yet scientific-technical progress is above all the result of intellectual-creative activity. It all essentially depends on the personal attitude, consciousness development and activity of those involved. Another aspect: The growing dynamics, the necessary tempo in updating the production structure, the technologies and procedures, calls for important pre-conditions that can be created only within the economic framework or, even more than that, only through close cooperation with the Soviet Union and other socialist countries. Equally important is the fact that the combines, enterprises, work collectives and individual working persons are given a higher responsibility. The flexibility needed for that calls for a high sense of responsibility and of a willingness to make decisions as well as personal dedication. Finally one ought to point out that, based on all experiences, the growing dynamics in science and technology and in economic development as such cannot be coped with by one large-scale investment or another but requires a permanent rationalization, a constant modernization of extant production plants. The success of such rationalization processes, however, largely depends on the attitude, dedication and creative ideas of all the working people involved. It obviously is not enough to design, build and employ outstanding industrial robots. Economically effective they only become when the production organization, the technological process and many other conditions for using them are changed. That means this requires the participation of entire departments, i.e. a large number of workers and engineers. That is all the more so in that it is part of our basic policy principle that scientific-technical progress must go together, in principle, with improved working and living conditions.

In other words: Close ties between the party and all working people is the key question for successfully implementing the SED's economic and social strategy. From that, increasing requirements arise for each and every party member.

It means the growing role of the Marxist-Leninist party in deliberately shaping our dynamic economic and social development by no means is any longer a theoretical prediction but a practical requirement that has to be met day after day. The increasing dynamics of socialist society and the party's growing role are two sides, two aspects of one-and-the-same process.

The steady development of the GDR's economy and its qualitative and quantitative growth reflect the fact that the SED has drawn the necessary conclusions. It has always considered that the ability of the party to exercise its leadership role even under rapidly changing conditions is the key issue for the continued shaping of socialist society.

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GERMAN DEMOCRATIC REPUBLIC

RESEARCH POTENTIAL SEEN INADEQUATE TO MEET ECONOMIC NEEDS

Science Academy President Article

East Berlin EINHEIT in German Vol 38 No 8, Aug 83 (signed to press 13 Jul 83)  
pp 725-732

[Article by Prof Dr Werner Scheler, member, SED Central Committee and president, GDR Academy of Sciences: "Reciprocal Relationship Between Basic Research and Production"]

[Text] Interactions between basic research and production are different and new in dimension in each developmental phase of society. Mainly the social production relations, society's socioeconomic structure, raise new questions and problems and urge a new quality of the linkage between research, education and production. It is up to us to find and materialize goals, forms and methods for the entwining between research and production that are appropriate to our socialist conditions.

This is how Wilhelm Ostwald described the connection between basic research and production: "Without foundations one cannot build anything permanent, yet on foundations alone one cannot live."\* Without scientific foundations modern production is unthinkable today, without highly developed production efficient research is not feasible today. Both--research and production--form a resonant circuit, as it were, which is kept oscillating by social needs as well as by the deepening and expansion of our insights into the inevitabilities in nature and society inherent in science.

It is up to socialist society to learn to deal ever better with the reciprocal connections between science, technology and production, as Comrade Erich Honecker, general secretary of the SED Central Committee, pointed out in the spring of this year before the kreis first secretaries.\*\* He focused in that context on imposing the science and educational potential of the Academy of Sciences and of the universities and colleges more effectively still on economic performance growth. But that precisely calls for ensuring close substantive and organizational interactions between research and production facilities.

\*"Moderne Naturphilosophie," Akademische Verlagsgesellschaft, Leipzig, 1914, p 65.

\*\*"Speech by Comrade Erich Honecker at the Central Committee Secretariat Conference with the Kreis First Secretaries," NEUES DEUTSCHLAND, 19/20 February 1983, p 2.

## The Function and Place of Basic Research in the Reproduction Process

Within the research-technology-production cycle, basic research has the job to explore and tap new scientific territory, from thoroughly plumbing original ideas, the disclosure of inevitabilities in nature and the deducing of theoretical relations, all the way to working out the kind of research data that can become the basis for novel procedures and products.

Characteristic of science, especially of basic research, is its innovative nature, or its revolutionary nature, as Karl Marx called it. The significance of a scientific performance is ultimately to be gaged against its innovative effect. And I apply the concept of innovative effect here to technical-technological and economic consequences as well as to basic changes in men's thoughts and lives, to essentially new insights into the thoughts of motion of matter and society.

True enough, there is no failsafe measure to determine the significance, and hence the social value, of basic research data, since it often takes years or even decades for time itself to judge a performance. Often it is the practical field, especially the economy, that decides the importance of a scientific result. In the final analysis it is production that becomes the decisive basis for the efficiency and developmental potential of a society altogether.

Therefore we have been trying with utmost resolve at our Academy to elevate the economic weight of basic research decisively. This does not mean to slight the work on fundamental disciplinary tasks; it is rather a recognition of them because precisely from new disciplinary developments and insights, the disclosure of new working principles and methods, the decisive technical-technological production advances often are derived.

All new working principles or scientific-technical solutions can by no means be carried over into production. Even in the most greedy and profit-oriented corporations at most between 3 and 5 percent of the solutions can be transformed into economically auspicious products. Scientific-technical research, however, must be conducted in appropriate breadth in order to get the economically most viable solution for production in the end. For one thing, only in the course of a graduated selection process it becomes apparent whether an innovation is successful. And then also, variants that are not economical can become economically interesting through changes in the resources situation. Only a sufficient potential in problem solutions can ensure high economic flexibility.

An analysis of the yields of scientific-technical potentials in the GDR shows great disparities among the various facilities and combines and indicates the need to elevate, and shore up through adequate patent laws, the novelty value of scientific-technical solutions. Basic research--especially also that in the Academy of Sciences--bears a considerable share of responsibility for a higher impact of inventions in the R&D potentials in our country. Handles for that I find especially in the originality of requirements and methodological solutions and in a deeper technical-technological saturation of our research.

What I say here about R&D naturally fully applies to basic research. At times the question is raised whether the GDR, as a relatively small country, could even afford its own epistemologically oriented basic research, whether it needed

that in the first place. Would it not be preferable to study the international literature and apply our own R&D to socially relevant data when they surface? What is completely missed when one thinks that way is the very nature and decisive target functions of basic research:

--Without an adequately broad and efficient basic research of our own we could not even recognize the scientific and economic importance of research data obtained in other countries.

--Normally, basic research data of economic importance are published only after being copyrighted or are kept back until technological and applied surveys establish, or rule out, their technological and economic usability.

--Furthermore, there are often larger latency periods between finding something new, demonstrating its duplicability and validity, and finally publishing it, so that when another research team picks up published data, it usually hobbles behind for years.

--What seems decisive to me mainly seems to be, however, that in a number of intelligence-intensive and technically highly demanding production branches, innovative technological developments are hardly any longer possible without detailed practical, particularly methodological, experiences and knowledge in basic research.

To put it plainly: Renouncing one's own basic research would mean programming oneself for being technologically behind permanently.

The SED and GDR government science policy therefore sets great store by basic research. That was once again emphatically underscored when a Politburo delegation, headed by Comrade Erich Honecker, visited the Academy in November 1981: "Our party's decision in the first half of the 1970's, to extend and promote basic research systematically as a source for new insights into the inevitable connections in nature and society, is of great importance, even over the long range, for our social development and for science itself."\*

There is no question about the need for basic research of our own. That puts the highlight more and more on its planning and organizational aspects. What is important is which priorities we are assigning to ourselves in basic research and which trends and problems are to be given priority; what matters is efficient cooperation domestically and among the socialist states, and a performance-encouraging internal organization of basic research.

#### On the Substantive Orientation of Basic Research

Above all, new basic research data, social needs and the material-technical and intellectual resources of society are the factors that determine the scientific-technical progress. They work together in a complex fashion and form the web of conditions for selecting the R&D tasks in our country.

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\*Erich Honecker, "The Scientists Are Called Upon to Work for the Good of the People," NEUES DEUTSCHLAND, 13 November 1981, p 3.

It makes sense that careful analytic-prognostic efforts have to precede that selection. Not everything conceivable is feasible; not everything feasible is necessary.

The Academy and college affairs have had good experiences with their eight programs in mathematics-natural science and technical basic research and the elaboration of chief research trends. These programs are oriented to providing leads in cognition for important economic sectors. A higher priority was assigned in this to research in the following areas:

--Mathematics, mechanics and cybernetics for automating production and information processes and an optimal utilization of material;  
--physics--including nuclear physics and the science of semifabricates--for the development of microelectronics and the shaping of an effective energy and working materials base, for measuring techniques, automation and the building of scientific devices;  
--chemistry, for the intensification of materials economy processes, especially for enhanced refining of raw materials, semifabricates and energy sources;  
--biosciences, for microbiological technologies and gene technology processes, for boosting yields in livestock and crop production, high-grade foodstuffs and medicine;  
--geological and space sciences, for making better use of the natural resources;  
--and the engineering sciences for the rationalization of energy economy processes, the constructive shaping of products for the automation and mechanization of treatment and processing operations and for transportation, transshipment and storage processes.

In planning and realizing the concrete research tasks derived from that, the strategy for economic intensification is the essential criterion for our research, as the intensification process itself forms the basic line for the performance and potentials' development in our research.

To provide basic research with high efficiency, consultations and accords between the Academy and the specialized ministries have been found more and more beneficial. This way we have managed a better coordination and closer linkage between the development strategy of the industrial branches and the long-range conception of basic research. Of course, when the five-year plans and the annual plans are being prepared, there must be a constant adjustment and concretization of the tasks in both partnership areas.

On the basis of such long-range orientation, a purposeful and direct cooperation is taking place between the combines and enterprises and our Academy's central institutes and institutions. That is a characteristic and successful element of our socialist science and economic policy.

Basic research has to set great store by the theoretical deepening and methodological development of the science disciplines because that precisely originates new handles for applied research and for the procedural and product development, which in turn raises new questions for basic research. More thoroughly and consistently than we have done, it seems to me, must we pay attention to linking methodology with gaining new knowledge.

In the substantive basic research planning in the Academy and in college affairs, the disciplinary basis has proven necessary and viable as, precisely, the crucial data for the innovation and intensification processes in the economy grow out of the advances in methods and cognition. Research oriented to the disciplines and interdisciplinary collaboration, rather than being mutually exclusive, make for an extremely fruitful symbiosis.

Apart from the Academy and college institutions, basic research also needs immediate home bases in industry, agriculture, the building trade and other domains. Through the forming of the combines, better prerequisites have, in principle, been created for creating the necessary scientific lead for the combine's more long-range production strategy. Surveys have established, however, that in some combines the R&D potential is not yet sufficient, quantitatively and qualitatively, for obtaining or maintaining through production scientific-technical top standards and, hence, the competitiveness of the products on the world market.

Granted even that not every one of our combines must have its own basic research--though it must have its technological research and procedural development--that is a reservation which certainly does not apply to combines that through their production assortments determine the scientific-technical level of our entire economy.

#### Techniques and Technology

That brings us to the complex of technology and procedural development which follows basic research. In his economic studies, Karl Marx attributed a cardinal importance to technology. He wrote: "Technology reveals man's active relation to nature, his life's immediate production process and, thereby, also his public relations of life and the ideas arising from them."<sup>\*</sup> It is up to technology to translate new or improved working principles and other relevant data from basic research in mathematical and natural science research into production procedures. For that, technology builds on the fund of its own basic research. I have referred to examples for it, though one yet does not always fully recognize the range of such work and the creative demand made on technology and procedural development in basic research. Still, mathematical and natural science research only becomes legitimate as a productive force through technology and the production based on it.

Applying a laboratory result in production procedures goes by steps or stages. Technological seminars and testing and pilot plants are as a rule indispensable for it. Even though technological research and procedural development naturally are domains of the industrial scientists, certain technological trends and capacities at several of our Academy institutes have, in our experience, been extremely beneficial for the cooperation with the combines. Where our natural science facilities derived technical-technological solutions of principle from the advance in knowledge, a much closer coupling with industrial research was obtained and application time frames could be shortened. The development of special technological tasking areas and further technical seminars at our natural science institutions I therefore consider an important strategic task to boost

<sup>\*</sup>"Das Kapital," Vol I, Marx/Engels, "Werke" (Works), Vol 23, Dietz publishing house, Berlin, 1962, p 393.

the natural science impact on the economy effectively. Commensurate resolutions have been taken for college affairs.

Every basic research scientist who has been involved in carrying data of his work over into production knows that this activity poses new questions for basic research. This mental feedback from the application and production process is something I regard as an indispensable source for the conceptual further development of basic research.

#### Basic Research Planning and Cooperation

From all I have said it must have become clear that science and technology planning and organizing the linkage between research and production have become important tools for the targeted development of socialist society. We have a considerable R&D potential in the GDR. As many as 184,000 persons were engaged in R&D in 1981, and M 8 billion, or 4.1 percent of our national revenue, was allocated for science and technology.

A careful selection and coordination of R&D tasks is imperative for the sake of high efficacy. The science and technology state plan system in the GDR and that of the mathematics- natural science basic research plan have stood up well. Legal regulations, such as the tasking workbook order, encourage the binding nature and effectiveness of cooperation. These orders and regulations become fully effective only, however, when we ensure everywhere a comradely cooperation among the partners, sustained by their joint responsibility toward our socialist society. And that normally results from the labor process, especially in test situations.

In basic research planning in recent years it became necessary to derive the tasks in the disciplines more under the aspect of complex problem requirements. Requirements on basic research, as arising from the key points of our economic strategy, do not confine themselves to specialized areas. Energy and automation problems address mathematics, cybernetics, mechanics, physics, chemistry, partly also the biosciences, the geological sciences, the economic sciences, sociology and other disciplines. To focus the coordinated tasks in the disciplines on such key points in our economic strategy, so-called complex research tasks have been conceived within the framework of basic research. They are interdisciplinary or multidisciplinary in nature and are meant to ensure greater economic relevance of basic research in the Academy and colleges. Such complex research tasks--including their respective application projects--have been set up in microelectronics, manipulative and robot technology, automated digital image processing, the geo-science foundations for the economic utilization of the earth's crust and other problem areas.

In conceiving and working on such complex tasks, the economic sectors or combines have to take a part. That ensures the requisite practical relevance and makes industry focus early on the tasks of application ahead. For orienting basic research it has turned out to be extremely useful that industrial branches and combines prepare long-range product development conceptions and corresponding R&D strategies.

Embedded in the long-term research programs and complexes of themes are concrete target projects which mostly serve the direct application to production preparation and production itself. It serves the purpose if the future producers are made accountable for such projects and the cooperation with collectives of the Academy and colleges is made mandatory through economic contracts and tasking workbooks.

Contractual commitments to the cooperation between basic research institutions and combines and enterprises is only one aspect, however, in the close linkage between science and the economy in our country. Conditions have ripened, it seems to me, for developing still more effective forms for the cooperation between research and production.

Apart from setting up and extending technological trends and facilities and technical seminar capacities at the Academy itself, in some tasking fields we have started to set up technical seminars together with industry. They serve a production-relevant handling of ambitious technical-technological research tasks. The results flow directly into procedural and product development or optimization.

We also carefully study the experiences in other countries, especially in the Academy of Sciences, USSR, on how basic research cooperates with industry. There, various forms have developed such as science-production associations, particularly in industrial conurbations, or research-production-complexes which are integrating the total application cycle, from research to economic use. Without going into the various forms and opportunities, the results and efforts thus far do show the need and way for more closely combining the advantages of socialism with the process of the scientific-technical revolution, whereby to arrive at a new quality of interaction between basic research and production. Forms of cooperation that have stood up well must be further developed, new ones must be tested. Appropriate points of departure are provided by the Academy-industry complexes and the college-industry complexes that now exist.

In agreement with Soviet authors, we accept as a fact that the science-production integration is assuming a qualitatively new character and that basic and applied research fuse increasingly. The reasons for that are the following:

--The production process is increasingly turning into a technological science application process.

--The science intensity of production is growing with the level, scope and efficacy of production techniques and the innovation rate of technologies and products.

--The tools and equipment of research institutions and intelligence-intensive production branches are becoming more alike, science and production techniques also do.

--The industrialized organization of research or the industrialization of science in general is growing fast.

That development is objective in nature. It is due to the unity and interaction between the scientific-technical and the technical production potential.

Educational and personnel requirements are of extraordinary importance to that process. Close mental ties between the collectives of the science institutions of the Academy, the universities and the colleges and the production sectors are imperative to ensure a high scientific level and high economic effects in research, application and production.

With these aspirations I also include under our concrete conditions the systematic personnel exchange planned among the research facilities of the economy, the Academy and the colleges. That must not be and cannot be a mass movement, yet the most creative scientists exactly and the potential leaders in science and technology ought to have their own expertise and experiences in various domains of our society.

The Academy of Sciences and the Ministry for Universities & Technical School Affairs are going to draw up a balance sheet in November this year on the state achieved in the basic research results thus far in the current five-year plan and confer on the further development of the research programs, the chief research trends and the science disciplines. A decisive basis for forming substantive key points in basic research will be the requirements resulting from the economic strategy for the 1980's and the more complicated external conditions--placed particularly also on raw material-oriented research.

Science in our country has assumed ambitious tasks for the 1980's and 1990's. Basic research will do what it can to fulfil them.

#### Research Institute Experiences

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pp 733-739

[Article by Prof Dr Siegfried Schiller, deputy director, Manfred von Ardenne Research Institute: "On Introducing New Working Principles in Production"]

[Text] "A sharp wind is blowing, as we all know, on the international market. The tempestuous scientific-technical progress also accelerates economic development and, above all, makes increasingly steeper the rise of productivity. With that we must keep pace. Then alone can our economy do what is needed to improve further the life of the people and create the solid economic foundation for the steady strengthening of socialism."

Erich Honecker

In line with our party's resolutions, we in the Manfred von Ardenne Institute consider it our duty to face the growing scientific-technical and economic yardsticks for the 1980's. Our desire is to convince through achievements; the point is, after all, as the fifth Central Committee session stated, that "for the sake of higher effectiveness, our technological opportunities must be played out much more effectively."

Elevating the technological level of production is of decisive economic and political importance. To do this is one must fully exhaust long known methods. It is amazing what one sometimes can still get out of them. There is a broad field of activity here for rationalization and the innovator movement. In parallel with it, it is important to ready working principles not previously applied for the use in production or to carry them over from other fields of operation. The following is a report on some experiences in introducing new working principles we have gathered in our research institute together with our partners from industry.

The basis for innovations are sufficiently many good ideas which then have to be channeled. That is why we shall first explain the whole process of generating and utilizing ideas. In scientific work oriented to practice, the goal of industrial production has to be attained with the smallest possible effort. If scientific data are to be used, someone must be there who needs them. Developing the proper communication between research and production crucially determines the smooth application of R&D data.

Circa 80 percent of our institute's capacity goes to cathode ray, vacuum and plasma technology. The outcome of developments leads to methods and installations most of which are unique in character. We entitle all these tasks together as "technological research." Plant and methods development makes for an organic unity. As the working style needed for "technological research" is likely to be of general interest, we shall describe it by using our own experiences.

#### Creative Work Atmosphere

The effectiveness of an R&D facility greatly depends on the work atmosphere in control there. The large natural science schools are eloquent testimony for it. In our socialist society also, and especially, material conditions by no means alone control results. The why and wherefore of an individual's research is something that becomes increasingly important to know. There is something stimulating in the realization that his results are not--as in capitalist countries--subordinated by the profit drive and exposed to possible misuse. Our state has created outstanding material prerequisites for scientific work. Research too is faced with the demand to make more of what we have got. So it is all the more important to create an understanding of the social need to inspire the collectives for their tasks in line with the orientation issued by the party. The tone in a facility on the whole, so crucial for dedication and results, also is determined by the model effect of the managers, the managerial style and the human relations in and among the collectives. Also at our institute, time and time again, the frank, objective and comradely cooperation between the party executive and institute and trade union management proves a fundamental precondition for that things proceed in the proper direction. The capacity of the whole collective grows when all pull together, the party organization acts as a mobilizing force, and each moves the lever available to him. Furthermore, it seems to me, a well balanced ratio, dependent on men and situations, between an implacable "must be" and enthusiasm plays a great role. By high demands, much can be achieved, and enthusiasm can move mountains. Both are important. The head of a collective will meet his task only if he knows how to stake out the correct goals and to persuade and sweep along his associates.

There are always many motives affecting the dedication of an individual. Each wants to be addressed and motivated in his own manner. Instructions and material incentives are needed, but they are always only the one side of the coin. That has to go together with a pronounced political motivation, with understanding one's own social responsibility. Furthermore, one must constantly take into account that the desire for approval, for respect among colleagues and friends, is of great weight to the development of one's own motivation. Also a well balanced ratio between supervision and trust, the face-to-face responsibility and personal talk foster a creative work atmosphere and commitment. When there is a pronounced self-motivation, a vocation can become a true calling in all fields of activity.

Many new ideas are born through frank discussions in and between collectives. Through a "question and answer game," which has long been the vogue among us, many hidden difficulties and obscurities come to light in time and can rapidly be eliminated. It is a good idea for managers to leave such rounds of technical discussion not to the lower echelons but to take an active part in them. That method is a good form of training, I think. It also often obviates prototypes or reports. Such truly frank discussions permit, of course, bringing up something that has not yet fully fermented. Reservations can also still be registered, even if management has already made the decision. To find entirely new solutions for certain problems, we also sometimes conduct brainstorming sessions. "Crazy" ideas are wanted there, too. Our industry partners take a most active part in such discussions. In the end then we sift the wheat from the chaff; then only expert arguments count; and it becomes immaterial who has said what--the plural "we" being all important.

Altogether then, I think, it is critical for a facility to give enough leeway for finding and rapidly applying novel ideas. One must make sure that the ideas of many are taken care of. Setting up a creative work atmosphere is more an art than a science; it calls for great expertise together with a clear political standpoint of principle. Scientific problems and human characteristics deserve equal currency among those who are deeply familiar with social connections and requirements.

#### Concerning the Research Risk

If a task is to be met with a high degree of likelihood, there must be extremely safe planning for it. The expenditure of effort and time must be commensurate. If some things simply fail to be explored, many procedural variants are ignored or many factors that have an influence remain unknown. That leaves, of course, a commensurate risk for meeting the task: Maybe there are better solutions, and then there is a certain likelihood that not everything will work out as planned. Either preprogrammed success or a risk is the question here. A 100-percent assurance in research, it seems to me, is hard to come by; we can actually not afford it. The most assured and sometimes even best technical solution frequently is not the best in economic terms because finding it is too expensive and takes too long. Go, handle what you can use in good time. I always become quite skeptical when everything always goes so smoothly because it gives rise to the question whether the expense was not too high and maybe the risk and efficacy were too low.

Encouraging the readiness for risks, in my opinion, is an important prerequisite for improving R&D effectiveness. The risk to be taken, first, depends on economic need and potential benefit. We must preserve the principle of appropriateness. To judge a risk appropriately, one must have practical experience and be realistic. Even when they accept the performance, contract partners and managers have to remember that the word "risk" played a role in the game. The attitude of contract partners and managers thus greatly affects the risk willingness of an institution or collective.

If you want to find something new, you must do something new. If one always only ran in beaten, preprogrammed, tracks, all one can find is, at best, known already. If one is orienting oneself to tasks that have somehow already been resolved somewhere in the world, the risk in fulfilment is, in principle, not all that great. But then there also certainly are problems where production is to be oriented to a new method that is not yet internationally established and may even still be in a nascent state. In that state, perusing literature and prospectuses will not tell you how the land lies. Finally you have to remember that, in capitalist countries for instance, even technical literature often is commercialized. Many a science article is written from the point of view of handfast commercial interests and only lets pass what one can already sell oneself. That is as logical as it is understandable; too often it is being ignored, however.

The fund of knowledge all over the world has to be creatively absorbed. It is important to form one's own opinion based on own examinations and own ideas. This may be explained by an example from our own institute: In good time in 1974 we ran into a new coating principle that promised to revolutionize all vacuum coating. The properties were compelling, when looking at the future tasks in electronics. Rapid action seemed the order of the hour. At a rapid pace we organized the cooperation with ZFTM (Center for Research and Technology in Microelectronics), and a new vacuum coating installation system was set up. This turned ZFTM into the first enterprise in Europe to make installations with the new coating principle. Still today the GDR belongs to the internationally recognized top group in this field, not only in research but also in application. We were able to inspire many of our traditional industrial partners. Yet there also were some who did not want to accept such a rapid reorientation because the consequences were indeed far-reaching. Finally even other, partly long-range, R&D programs were placed in doubt thereby. Life had overtaken planning. In such a case, in my opinion, there can only be one decision: the plan must be elevated to the height of the times.

The coating principle, which we introduced by the term of "Plasmatron-Sputter," meanwhile has taken a triumphant march throughout the world which far transcends our own original expectations. But if anything had gone awry, they could have blamed us for many a neglect. We dared much and underlined our conviction by our acts. In less than 2 years we reprofiled large areas in the Institute for the new working principle, and our industrial partners shifted over early to this production innovation. For the institutions involved, both the installation manufacturers and the potential users, there was only one motto: Deciding and prevailing, with daring, over the doubters and the undecided. The end here was our success, and it turned out that he who ventures will win. But it is not always that way.

If you want to be in the lead pack, you've got to be among the first to get off. You can't wait until something is in the world, you've got to anticipate what is to come. The way to the top is rocky and arduous.

#### Communication Between Research and Production

Close interchange between research and production is, to our institute, an important prerequisite for having something beneficial happening. Without the stimulating collaboration with our partners in industry, our institute would never get the attention we enjoy today. For industry-oriented research the times are long past where one could, remote from life, figure out something reasonable that could quite rapidly be applied afterwards. We, in any case, get most of our stimulation--also for basic research tasks--from the production field. Multi-layered contacts with the enterprises acquaint us with the actual problems and real possibilities in our industry. That places us in the position where we can engage in market-oriented research. The international market situation also is drawn into our considerations. Economic aspects occupy us there from the first to the last hour of a project. Of course we do not wait until someone tells us what to do. We do not like to surrender an initiative but form our own opinion on what might be good for our partners in industry. If need be, we seek to persuade them. A scientist ought to be aware of his obligation to bring things in.

The gates of our institute, in turn, are open to our partners in industry. We also show them things that initially have nothing to do with our actual collaboration. Many a suggestion for new applications in our technologies goes back to such discussions in the laboratory. Furthermore it is standard procedure that associates of our customers take a hand in the development projects in the institute, just as our own colleagues are involved in starting operations in the enterprises. Thereby we provide a broad flow of information between research and production.

Installation costs are an important matter with respect to the efficacy of today's research because, if one is to engage in modern research, efficient installations must be in place. We are facing the same problem and have made a virtue of necessity: At the outcome of all our efforts production plants are built that are put into operation at our place or by the industrial partner directly. These installations, meant for production and already in production, are an essential component of the aggregate of installations we can resort to in our technological research. Development applied often also is a springboard for a new stage. At the first level after application it becomes a matter of making full use of the developed technology. In this activity we gain essential insights for a new generation of installations and methods and, often, for entirely new applications. This means that research is taking place on the highest level of installation technology. Production experiences are drawn on. We find that in the United States and Japan firms in our field evidently proceed identically. Yet compared with us they are at the disadvantage that they are granted only limited insight into the customers' technological experiences so that the know-how cannot be taken to the competitors. For the work in our institute, then, there is no sharp delineation between basic research, application and rationalization. Application is not a one-time act but a continual process. Intermediate results also have to be utilized.

Tasking workbooks constitute a connecting element between research and production. The close entwining of obligations expressed therein heightens the sense of being in it together, of the joint responsibility for rapidly applying new data. When both the customer and the manufacturer sit in one-and-the-same boat, neither of them is under the temptation to let the other one row the boat by himself.

Tasking workbooks, always oriented to the most up-to-date data and allowing a certain flexibility at work, greatly prevent the danger that the paper will take off on its own. That deserves to be emphasized because it has been demonstrated that the more long-range planning is, the more easily it may happen that the limited knowledge of yesterday determines the production sequence of today.

Is it not precisely the socialist economic system that has the prerequisite for a closely intertwined and confident collaboration among juridically independent facilities? Something like that is hardly possible in the capitalist economy because there they are optimizing only for the sake of the firm's profits, not on behalf of all society. We must still make more of this advantage of our economic system; enterprise egoism is alien to socialism. A genuine socialist attitude by the managers can go a long way toward always looking at the whole. The readiness for cooperation is an important factor in efficiency.

#### Specifics in Technological Research

In the technological research we are engaged in at the institute, in a system of physical laws that are as such known, we are pushing into virgin territory. Through the combined effect of various influence factors, new insights arise and, eventually, new laws as well. The combining of well known effects may lead to improved qualities. The jumps made thereby are of diverse size of course. Very large jumps are rare; usually it is the many small steps that lead us ahead. Often it is not even possible and correct to separate the influence of the various effects, what is practically decisive for them is their effect in the natural environment. Even while its foundations are laid, technological research gets oriented to the practical, so that a number of secondary practical conditions have to be taken into account. First one must look at the technology itself which one has or which one can create through reasonable expenditures at the proper time. Many new and beautiful processes could be imagined today which cannot be realized because the technical prerequisites are not there or their realization is too expensive. This does not mean simply accepting inadequacies.

R&D data can hardly be used if the principle for their being realized is not drawn into analyses in good time. Communication with production, as already explained, therefore becomes an important precondition for successful work. There is a factor of the first importance, not to be underrated, for any success: the people in the introducing enterprise. We have found time and time again that technologies with the same degree of intricacy can fast be used in one enterprise whereas another enterprise wastes much too much time in struggling with their elements. Properly timed training can provide the necessary knowledge. But that is not all of it. New technologies frequently demand organizational changes and a proper attitude toward innovations. Frequently it takes a while until everything has settled down. That time frame can be much shortened through suitable preparations.

Some comments, finally, on the sequence of the projects to be carried out. Traditional routine--first basic research, then methods investigations, then installation development, and then realizing the installation--has not stood up well in our place. The sequence depends on the task, the given state of knowledge and many practical secondary conditions. The various developmental steps have an organic unity and must not be broken down too much in terms of organization and personnel. In any case, we have had good experience with the principle of carried-through accountability. The development and use of new working principles call for an adaptive working style. The intermeshing development, in time, between process and installation is a characteristic trait. The situation is wholly different when it is a matter of introducing procedures long established. In such a case, technological optimization can relatively well be separated from the plant technology; installations can be ordered in accordance with prospectus values and then be put into operation.

Procedures have to be reconsidered when use is to be made of top technologies. Installations with which still inadequately known processes are to be carried out do not as yet exist. The "chicken or egg" problem of technology is to be solved. When thrusting into new territory, the development of the installation and the process appear in close interaction. Data have to be applied by stages. The modifying of newly developed installations is part of the planning work. The installation and the process must be made to match each other. In many cases it has been found suitable to put a method through development into an installation already in place; a 10-percent modification degree is perfectly customary and can be accepted.

In technological research, along with technical aspects, the feasibility of realization, the matter of economic advisability, possibly subjective factors, and then the matter of rapid application become decisive for the content and sequence of projects. This somewhat pragmatic procedure may be the reason that technological research is slighted sometimes as being "no real basic research" or even "hobby work." But is it true that work loses its scientific value only because heed is paid to technical feasibility and questions of utility become crucial elements? Technological research and the working style needed for it, in my opinion, deserve more regard and greater scientific respect. Only through technology and the installations technology belonging to it, research data are transformed into hard cash.

#### Success of 'Inventors' Schools

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[Article by Dr Gerlinde Mehlhorn, leader of the higher education work group for creativity research and talent development; and Dr Hans-Georg Mehlhorn, director, youth and education division, Central Institute for Youth Research, Council of Ministers Office for Youth Affairs: "Inventing Can Be Taught and Learned"]

[Text] In coping with science and technology, inventing occupies an important spot. Comrade Erich Honecker has pointed out that "the long-range stable economic growth in the GDR relies on the acceleration of scientific-technical progress. That calls for still greater creative results in our R&D. Capacities

are to be concentrated on new products and methods from which profound economic effects emanate. Achieving genuine top performances thereby means paving the way for effective production over the long haul."\*

We have created a sound basis for implementing that task. That concerns the material and financial means we have allocated for science and technology as well as the high educational and training skills for the working people all around, particularly also in this field. In 1981, there were 184,000 persons engaged in R&D. In our growing efforts at making that potential most effective we can rely on significant traditions in scientific-technical creativity which must be fostered and extended with the greatest care.

The economic strategy for the 1980's which the 10th SED Congress has issued, resolutely oriented to greater creative R&D results, also sets the greatest store by the activity of inventors. In 1982, more than 8,500 patents were registered, almost 16 percent more than in 1981. Yet the great disparities in results, from combine to combine and from enterprise to enterprise, demonstrate there are still significant reserves. They also impress us with that we must still give more thought to how we can achieve more of a range yet and a higher technical level with more definite economic effects for each invention.

In enterprises and combines where the lead for and realization of tasks of invention are a central component of management activity, the greatest successes are achieved at this time. In the best combines the idea is beginning to prevail more and more that inventing is among the normal working tasks of college and technical school personnel engaged in R&D, who are to be assigned concrete commissions to that end.

#### Organizing the Success of Invention Activity

The fine development of the inventors' activity in our republic can be carried on by further improving the whole invention and innovator process continually and by still more favorable results. In this field too, success must constantly be organized. That is assisted by the part-time inventors schools the Chamber of Technology set up in 1981 as an important form of continuing education. The 6 April 1982 resolution from the Chamber of Technology presidium secretariat says that they want to help enable the attendants, through motivation, instructing in knowledge and experience and training in working methods, to orient themselves to international standards so they can deduce from the suggested future state of development invention requirements, while keeping in mind the needs of the GDR economy, and become active as inventors while placing the highest criteria on their own scientific-technical efforts.

Inventing calls for high technical knowledge and a socialist attitude toward work. Inventing calls for the willingness to make great efforts and take risks, for passion, indeed, in the struggle for optimum solutions and, above all, strong bonds with our socialist society, to the further development of which each invention is to contribute at an optimum. The scientific research and experience

\*"Bericht des Zentralkomitees der Sozialistischen Einheitspartei Deutschlands an den X. Parteitag der SED" (SED Central Committee Report to the 10th SED Congress), Dietz publishing house, Berlin, 1981, p 51.

of many engineers and scientists suggest that their knowing of the social benefit of an invention greatly induces them to give their best. Yet how fast and well politically founded motivation, great interest in creative activity and extensive technical knowledge do indeed give rise to inventive achievements, that depends, not last, on methods skills and abilities. To many potential inventors among the students, the idea that inventing can be taught and learned still is as puzzling as it was more than 70 years ago to the readers of the booklet "Die Forderung des Tages" [The Challenge of the Day], in which its author observed: "Schiller, sending the first version of his poem 'Die Buergschaft' [The Surety] to Goethe for his criticism, wrote to him: 'I am curious whether I was fortunate enough to discover all the main motives inherent in the subject matter. Think about whether something else occurs to you. This is one of the cases where one can proceed with great clarity and almost on principle can invent!' Those remarkable last words express how much Schiller himself was struck by the possibility that one could invent according to principles, i.e. along specific technical rules, while such a procedure was offering itself to him by itself. The general opinion today is not likely to be so remote from Schiller's at his time, and inventing by rules, be it in poetic or technical works, still appears like an inner contradiction. We are used to regard 'inventions,' as the word itself implies, as something that cannot be ordered but must be hoped for as a gift of the moment."\*

Those sentences were formulated by the later Nobel Prize winner Wilhelm Ostwald (he got the prize in 1909) in 1907. The idea that one could discover something systematically did not let Ostwald go ever again. Still in the year of his death, in 1932, he turned to it again in one of his last articles.\*\* In it he took issue with many possible arguments that are being held to this day against the conveying of inventor's methods. In deep commitment, he wrote: "So it is quite understandable that the idea that inventing could be taught or learned runs into the resistance of all of a medieval persuasion, whose number is still amazingly large today, even among the 'educated.'\*\*\*

One of the most ardent propagandists for the development of "Creativeness as an Exact Science," the title of his most recent book, is the Soviet scientist G. S. Altschuller. Another book of his, "Erfinden--(k)ein Problem" [Inventing--No Problem], was published in our republic as long as 10 years ago. He himself directs a regular inventor school in Baku, and following his premises, in the technical departments of colleges of the Ukraine a 56-hour instruction program, "principles of technical creativity," has been offered since September 1980.\*\*\*\* Another successful Soviet scientists dealing with invention methods is G. Busch of Riga, whose writings also have been properly accepted.\*\*\*\*\*

Our republic has already published a creditable number of publications on the subject.\*\*\*\*\* Especially adolescents and young adults have shown much interest in these methods. Many of these methods can rapidly be appropriated. The authors

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\*Wilhelm Ostwald, "The Technique of Invention," "Forschen und Nutzen" (Exploring and Using), Akademie Verlag, Berlin, 1978, p 23. \*\*"The Doctrine of Invention," "Feinmechanik und Praezision," Vol 40, 1932, No 10, Leipzig; "Forschen und Nutzen," pp 31 ff. \*\*\*Ibid., p 32. \*\*\*\*SOWJETWISSENSCHAFT, GESELLSCHAFTSWISSENSCHAFT-LICHE BEITRAEGE, No 6, 1981, pp 861 ff; ibid., pp 883 ff.; \*\*\*\*\*"Analogy and Technical Creativity" (in Russian), Riga, 1981; "Steered Intuition," Dummersdorf-Rostock, 1979. \*\*\*\*\*Cf. inter alia Friedrich Hansen, "Konstruktionssystematik"

of the present article were able to show by their own research that such methods can be effectively conveyed to pupils, apprentices and, above all, to students, without it leading to any curtailing of other knowledge and skills or to excess burdens or expansions of the teaching plans and study programs.\*

#### Handing on the Experiences of Creditable Inventors

The inventors schools of the Chamber of Technology have the job to assist, in particular, young college and technical school graduates in working up their first patent through developing motivation, elucidating civic responsibility, handing on the experiences of creditable inventors and, above all, through conveying the requisite knowledge in methods. Thereby they are being better qualified to help fulfil the tasks in the science and technology plan, enhance the creative content of technical and technological solutions, and finally contribute systematically to working up economic top achievements. The inventors schools follow the motto: Creditable Inventors Train Inventors. Most of their pioneers have for years absorbed the theoretical principles of these schools and the instruction material on which they are based in the central working community, "Invention Activity/Creativity," under the presidium of KDT [Chamber of Technology] together with interested natural, social and technical scientists. That has established a sound basis. The inventors schools are highly effective because they are closely geared to the real working process of creatively engaged engineers and take important sociopsychological inevitabilities into account from the outset which may lead to efficiency enhancement. The following substantive and organizational principles turn out to be benefits of the inventors schools:

--Instruction from creditable inventors, many "meritorious inventors" among them, makes the attendants most willing to accept advice and apply it as well as possible to their own activity. They know right from the first lesson that their teachers not only are theoretically in command of what they teach but also are setting examples as inventors in practice.

--It has come about in the inventors schools that enterprises increasingly delegate R&D collectives interdisciplinary in composition. Compared with delegating individuals, this has the advantage that the designers, researchers, technologists and the given heads of their collectives learn and work together directly. Even before the course starts, the collective is told to prepare itself for the inventors school by preparing a precise formulation of a requirement for an invention problem derived from the science and technology plan. That then becomes the training example during the course. The collective thus works in analogy with real enterprise conditions on its requirement, learning efficient ways and methods of inventing by it.

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(Construction Systematics), VEB Verlag Technik, Berlin, 1968; Johannes Mueller, "Grundlagen der Systematischen Heuristik," Dietz publishing house, Berlin, 1970; Werner Gilde/Claus-Dieter Starke, "Ideen muss man haben," Urania Verlag, Leipzig-Jena-Berlin, 1970; G. S. Altschuller, "Erfinden--(k)ein Problem," Verlag Tribuene, Berlin, 1973; Hannes Gutzer, "Mitdenken erwünscht," Verlag Neues Leben, Berlin, 1978; G. Mehlhorn/H.-G. Mehlhorn, "Heureka--Methoden des Erfindens," Neues Leben Verlag, Berlin, 1981.

\*G. Mehlhorn/H.-G. Mehlhorn, "Untersuchungen zum schoepferischen Denken bei Schuelern, Lehrlingen und Studenten." Volk und Wissen Volkseigener Verlag, Berlin, 1979.

Delegating collectives moreover has sociopsychological advantages. If an individual was delegated and returns to his collective after the course he often runs into all sorts of reservations. If all members of the collective were students of creditable inventors, very different prerequisites exist for a determined joint struggle for success. Furthermore, it is much more efficient if not only one member of the collective has learned the methods of inventing and seeks to have them applied and perfected, but when all can participate in the same way. And then also, through training all members of the collective, the total process can be optimized even if, as a rule, there are differences in the degree of participation in the various phases of the working process.

--Realizing that extraordinary achievements require above-average efforts, 65 hours of lectures, seminars, exercises, training and evening discussions are held from Monday to Saturday. Influence is brought to bear constantly during that period on enabling the attendants to engage in inventive activity, even though both the intensity and manner in which it is done may differ.

#### Substantive and Organizational Principles

KDT brochures are given out before the courses that also describe the principles for inventing systematically. Such instructional material is based on internationally recognized and proven methods and techniques in problem solving, to which the authors add their experiences with the approach taken by proven inventors to solving scientific-technical tasks. It also relies on insights into the methods by progressive enterprises and combines in the management, planning and promoting of inventor activity and leads the readers to the most important sources of information in the field of world standards research, especially the patent literature, and it provides sociopsychological data on the forming of collectives committed to the solution of tasks in invention.

The first week systematically acquaints the students with selected methods of invention. That is only one aspect, of course, but may well be the most important one. Another teaching complex is devoted to motivation, especially civic motivation for inventive activity, through providing knowledge about one's own contribution to improving the efficiency of science and technology. The course further aims at consolidating the creative climate in the collective by conveying selected sociopsychological materials about the creative personality and the creative collective.

The emphasis of the training lies on deriving and specifying enterprise requirements as laid down in the tasking workbook. That is done in small groups of between 10 and 15 participants. Several thematic experience exchanges with "meritorious inventors," talks with experienced heads of R&D collectives and problem discussions with creative personalities, including artists, writers, discussions with competitive athletes about reaching top achievements, and ideas exchanged about the life and working style of noted inventors permanently contribute to enhancing one's own performance dedication.

After the first week, requirements are carried on in the enterprise. Then, what one has learned in the course is applied, put to the test and reinforced. It has been found profitable to sponsor a second week after 3 to 6 months. In it, an experience exchange takes place on the progress that has been made,

in conjunction with a thorough review of the enterprise examples. Participants are confronted with selected problems in scientific-technical legal protection and they get more information on the rationalization of R&D work in the enterprise. The work results achieved thus far are then defended before the science and technology directors.

In preparing and analyzing inventors schools, training with the heads of the facilities from where the collectives in question come has been found beneficial. Inventors schools achieve their greatest effect when combines become the chief sponsors and the executives, together with the party organizations, feel fully responsible for it. The greatest open-mindedness today is found, and not by chance, where invention activity has already had success. An example of it is the Wilhelm Pieck Mansfeld Combine. There, the general director informed all enterprise managers about the importance and objective of the inventors schools and instructed them to delegate participants who through their assignments would participate directly in solving scientific-technical objectives. The enterprise had to come up with a suitable requirement, integrated with the science and technology plan, that was to be taken care of by the delegates. In a conference of the combine's technical director, preparing the inventors school of the combine was discussed with the technical directors of the combine enterprises. Soon thereafter the first week's course was held with 24 attendants. A second week followed soon thereafter. Both were then analyzed by the combine's technical director and further concrete stipulations were made that included sending college graduates to such courses after they had worked themselves in, delegating more youth collectives, and sponsoring another supplementary course some 2 to 3 years later.

What have been the results thus far? First one has to say that the attendants place higher demands on their own work. The desire to invent has been greatly reinforced. Altogether there have been 400 attendants in these inventors schools up to now, which means we are only at the beginning. Thus far they have worked up at least 50 patent applications with a prospective benefit of between 4 and 5 million Marks. And one has to remember these are almost all fairly inexperienced and often young inventors. For most of them it is the first patent they ever applied for.

A special purpose of the inventors schools is to elevate the proportion of young inventors below 30. Leading people toward inventing early in life is so important mainly because social science surveys among inventors have shown that those who made their first invention when still young generally take part in more inventions later and work longer as inventors throughout their lives. The collaboration between younger and older personnel in the R&D collectives also makes possible activating the senior and more experienced working people who in the last couple of years stayed below their invention potential. Improving the creative atmosphere, a permanent challenge from their junior colleagues, and a higher appreciation for creative activity are important stimuli for these specialists to remind themselves more of their abilities and strive for high inventive achievements once again.

Supplementing and aiding the inventors contest of the FDJ, the Invention and Patent Office and KDT, the inventors schools seek to provide, in a targeted fashion, these young working people with the knowledge they need and mold appropriate abilities in them. A special concern in the future will be to acquaint the youth research collectives that are being set up right now in many enterprises with the working method of experienced inventors.

The form of KDT inventors schools here discussed is not the only one in existence right now. The Berlin Building Academy and the VEB Carl Zeiss Jena Combine, e.g., actively supported by the KDT working community, "Invention Activity/Creativity," have set up a 2-year course for young graduates. Its self-study and training phases are much more comprehensive. The VEB Television Electronics Plant is pursuing a different course. Relying on the instruction material of the inventors schools, an expert graduate physicist meets regularly with young intellectuals and in that circle discusses with them the solution of invention requirements from their work in the enterprise.

Other combines are engaged in similar deliberations and are preparing specific forms. Especially in the combines that have so far been most successful in this field there exists a great open-mindedness to using these opportunities as well to get a still more expedient effect out of R&D. Fruitful collaboration within CEMA is under way via the engineering organizations of the socialist countries. That collaboration also will bear fruit so that we shall ever better exhaust all available potentials in line with the 10th party congress demand.

5885  
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GERMAN DEMOCRATIC REPUBLIC

LEADING ECONOMISTS' WRITINGS ON ECONOMIC POLICY REVIEWED

East Berlin EINHEIT in German Vol 38 No 8, Aug 83 (signed to press 13 Jul 83)  
pp 791-793

[Review by Heinz Puder of writings in series "Oekonomie aktuell" (Present-day Economics): "Unsere Wirtschaftsstrategie" (Our Economic Strategy) by Helmut Koziolek; "Mensch und Oekonomie im Sozialismus" (Man and Economics in Socialism); and "Warum immer wieder Steigerung der Arbeitsproduktivitaet?" (Why 'Increase of Labor Productivity' Over and Over Again?) by Wolfgang Heinrichs, Dietz Verlag, Berlin 1982, 1983]

[Text] Since last year Dietz publishing house has been coming out with the series "Oekonomie aktuell." Three titles are now out: "Unsere Wirtschaftsstrategie," "Mensch und Oekonomie im Sozialismus," and "Warum immer wieder Steigerung der Arbeitsproduktivitaet?" These titles quickly found a wide circle of readers.

What typifies the upbeat in this series?

With their popular mode of writing, the authors set themselves the goal to make as many as are interested in economic problems thoroughly familiar with the political-economic principles, the substance of the SED's economic strategy and the concrete requirements for its implementation. They explain the basic lines of the SED's economic and social policy, uncover economic interconnections, provide deeper understanding for the tasks of the combines and enterprises, and thus suggest concrete conclusions for work.

Within the series, which follows a coordinated topical plan, each title constitutes a cohesive whole. Altogether it is an excellent guideline for study and for the practical implementation of the economic strategy. Great effort is made to explain the orientations provided in the 10th party congress resolutions and the SED Central Committee sessions for continuing the main task policy in its unity of economic and social policy. All titles help clarify the new requirements resulting from the way of intensification, which must consistently be pursued, while taking account of the rapidly changing reproduction conditions. Each author seeks to present vividly, from the vantage point of his topic, the new dimensions of economic growth, their causes and ways to solve the tasks tied up with them.

Helmut Koziolek, explaining the 10 key points of the economic strategy in detail, brings out why we have decided for the years ahead to come up with an unprecedented performance improvement. He makes clear the great efforts arising from that we have to accomplish this by a, in principle, equal and partly reduced volume in energy sources, raw materials and semifabrics. Production growth hence must be sustained largely by higher efficiency; production must increase faster than the expenditure in live and embodied labor. Gaining economic efficiency from high labor productivity due to science and technology--that is the idea that dominates our economic strategy. All elements in our streamlined economic strategy must lead to a decisive elevation of labor efficiency. That is expressed by greatly reduced expenditures per product and greater results. That is the core of intensively expanded reproduction.

All these tasks, processes and problems are presented understandably in texts that are easy to read. It is no exaggeration to say that especially in this regard the authors have sought to provide their studies with a special profile and that they managed to make real process in this, in comparison with many other publications. And what do we mainly mean by that?

The authors manage to exploit the lessons of the Marxist-Leninist classics to the fullest and tap their topical content for the given problem dealt with. Helmut Koziolek brings out clearly that, particularly, the Marxist reproduction theory is among the scientific principles for the SED's economic strategy for the 1980's, by which it is creatively being applied. He is not satisfied with general references to the Marxist reproduction theory but explains its various theses concretely, relates them to the tasks and requirements of today and draws conclusions from it for practical action. This provides the reader with a fund of theoretical knowledge in a popular manner.

Again and again it is being explained how we must, through the economic strategy, use consciously the requirements of the economic laws of socialism. An advantage of the present titles is that the political economy, economic policy and industrial tasks are not just placed side by side but are closely interlinked.

Otto Reinhold in his study turns his political-economic and economic policy accounts into persuasive issue-taking with the apologetics of imperialism, with the denigrations and distortions of real socialism. That study is a brilliant polemic against the ideology and policy of imperialism. Any propagandist who disseminates economic knowledge ought to study and exploit that work also precisely under this aspect. The following problems are placed at the center of it: Social security and social insecurity in the world of today, the basic economic law of socialism and the main task, advantages and impulses of socialism, the scientific-technical progress and man. Here the apologetic contention is unmasked that more wealth for the wealthy leads to more jobs in capitalist countries. Otto Reinhold demonstrates that that thesis contradicts reality and that high profits, of a corporation for instance, certainly do not lead to higher wages for the workers in it. On the contrary: any wage hike must stubbornly be fought for by the workers and employees. It is shown vividly how in capitalist countries under the conditions of the scientific-technical revolution by far most investments are used for rationalization, in consequence of which the number of unemployed rises.

These polemics persuasively demonstrate the advantages and values of socialism, the superiority of the socialist planned economy over the capitalist profit economy, as for instance by Wolfgang Heinrichs when he works out the differences of principle between socialist rationalization and the social consequences of the rationalization for the workers class in capitalism, or when he discloses the specific impulses and methods in increasing labor productivity which is developing further with the shaping of the developed socialist society in the GDR. Many facts are adduced to demonstrate how the workers class and the other working people in the socialist planned economy share in the planning and in the government.

Among the remarkable features in these studies are the authors' endeavors to make suggestions for the concrete implementation of the economic strategy in the combines and enterprises. That is served by the pertinent manner of presentation all around. That concern is further enhanced by that many tasks, e.g. the boosting of labor productivity, the acceleration of scientific-technical progress, or our socialist rationalization, are documented and illustrated by concrete industrial examples. Various positive experiences in enterprise collectives are thus popularized and recommended for emulation. The authors provide solid answers to topical questions, especially about the economic strategy. This is what Wolfgang Heinrichs shows: Increasing labor productivity is and remains the main way to increasing material and intellectual wealth and, thus, to the progress of society altogether. We can therefore not pause in our efforts to boost our labor productivity. This approach by the authors lends the present studies a clearly argumentative character.

As to the method of presentation, something else absolutely has to be mentioned: There is probably no other series containing such a successful synthesis of political-economic and economic policy insights, of industrial tasks and experiences and of so richly illustrated material. All studies contain a wealth of arguments, graphs, tables, fotos and surveys, well incorporated with, and significantly enriching, whatever is said about the different problems. That gives the reader a lucid idea of new technologies and products. By sound methods, explanations of concepts, definitions, memory tags and emphatic statements are incorporated in the texts. The higher efforts needed for our performance growth are connected throughout with our outstanding balance sheet for our economic, public and social development, while the greater opportunities and more favorable conditions that have arisen for the continued shaping of the developed socialist society are brought out, a prudent use of them being suggested.

Also useful for an economic propaganda that addresses reason as well as sentiments is that the authors draw on belletristic literature and pick up the opinions of experienced workers and other working people on fundamental economic tasks in our country, or when Otto Reinhold gages the enormous sociopolitical changes that have taken place in our republic during the socialist revolution against the ideals and goals formulated in the party programs of the revolutionary German workers movement.

Who in particular is addressed by this series? All who deal with the basic problems of our economic policy. These brochures deserve the attention of those who study at party schools, especially the kreis and enterprise schools of Marxism-Leninism, and of the participants and propagandists in the seminars for the study

of political economy and of economic policy in the party study year. It be recommended to all who deal with our economic strategy in the school systems of the mass organizations. For work collectives in the enterprises they are excellent guidelines for acquiring the principles of our economic strategy, for more deeply understanding the tasks that have to be resolved through it, and for drawing inferences for one's own actions.

What do I think should be taken into account for future studies? The profile of this series should be maintained and further extended. More consistently still each brochure should realize the intention to raise questions and answer them vividly, suggesting personal conclusions. The problem-rich, argumentative and polemic manner of presentation should be continued, while one could certainly do without accounts merely descriptive in character. Also desirable would be for authors to pick up questions playing an important role in our ideological work. Accounts on the approach by enterprise collectives to solving economic tasks should--documented by examples--include also those ideological problems that have to do with the formation of motives and attitudes, with enforcing new modes of approaching substantive economic processes. This would imply bringing out more clearly the concrete activity of party, trade union and youth association organizations that are paving the way for resolving economic processes, creating understanding, new modes of thinking, and a readiness for performance and change, and developing the willingness to resolve contradictions and surmount difficulties.

5885  
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FALUVEGI RECEIVES CSEPEL PROGRESS REPORT

✓ Budapest NEPSZABADSAG in Hungarian 29 Nov 83 p 5

[Article by Judit Kozma: "Initial Steps at Csepel"]

[Text] The Csepel enterprises, whose activities earlier were brought together by the Csepel Iron and Metal Works Trust, are enjoying their fifth month of independent management. Of course, 5 months is a very short time, but it is enough to make clear from what starting position the individual enterprises can begin, under what financial conditions they can work and with what measures they intend to lay the foundations for profitable management in the years ahead. In recent days the leaders of the Ministry of Industry, the Hungarian National Bank and the Csepel enterprises and institutions briefed Lajos Faluvegi, deputy premier and chairman of the State Planning Committee, about these questions and about execution of the State Planning Committee resolution which prescribes the conditions and frameworks for the organizational change.

The Protective Screen is Gone

The antecedents should be recalled in order to get a realistic evaluation of the current situation. By the end of the 1970's the Csepel Iron and Metal Works Trust had gotten into a critical situation. As a result of the earlier significant investments the enterprises were greatly in debt, while their profits decreased year by year, so there was no cover to pay off the loans. Although the enterprises and the trust made efforts to get out of their troubles their ideas did not offer an adequate foundation for the creation of lastingly profitable management. A detailed, basic analysis of the situation finally showed that the explanation of the lasting decrease in profit lay in developmental work which did not adjust adequately to the market, in a production structure which changed slowly and in costs management which was not adequate. The experts found the basic cause of these phenomena in the fact that the organizational, guidance and interest system of the trust was not adequate. That is, the "large hat" of the trust hid the differences between those managing well and those managing badly.

The very high loan repayment obligations took such a large part of the ever smaller profit that the tiny profit remaining at the enterprises had no attractive force. There was only one rational way to improve the situation--create the independence of the enterprises, by virtue of which the price and

regulator system would affect the enterprises directly, and not through the protective screen of the trust, thus creating sufficient interest in improving profitability.

Thus, the Csepel enterprises began their independent lives on 1 July 1983. The Iron and Steel Foundry, the Iron Works, the Metal Works, the Machine Tool Factory, the Individual Machine Factory, the Transformer Factory, the Bicycle and Ready-Made Industry Machine Factory, the Planning Enterprise and the Computer Technology Enterprise are working as independent enterprises. Two small enterprises were created, the Material Testing and Machine Industry Quality Control Institute and the Education Enterprise. The Thermal Power Plant and Service Enterprise and the Social and Worker Supply Institute became the joint enterprises of all Csepel factories and the Pannonia Foreign Trade Enterprise became the joint enterprise of the four plants largely involved in export. A Directors' Council to decide about the common affairs of the enterprises was formed. An Industrial Center was established which carries out essentially expert tasks with a total personnel of 58. It prepares the decisions of the Directors' Council but also offers professional aid to the enterprises. In recent months it has, among other things, offered aid to the experts of the interested enterprises in surveying the status of bicycle manufacture, in developing developmental ideas for steel manufacture and in an analysis of the product structure of the Individual Machine Factory. They studied the possibilities of common warehousing and began an analysis of various license contracts.

#### A Suitable Starting Position

The organizational transformation in itself is only one condition for stable management. For this reason the responsible state organs helped in the creation of financial conditions for independence. In recent months, reviewing the financial situation of the enterprises and evaluating the economic development plans laying a foundation for getting out of their troubles, the Hungarian National Bank has arranged the loan repayment obligations of most of the enterprises so that the factories will not get into a hopeless situation.

In the near future there will be a decision in a few important open questions also. The financial status of the two remaining enterprises, the Machine Tool Factory and the Individual Machine Factory, will be settled. The fate of the Mor and Szekesfehervar factory units of the Metal Works will be decided and the outlines for the operation of the Pannonia Foreign Trade Enterprise will be developed. The Bicycle and Ready-Made Industry Machine Factory is in the most difficult situation--bicycle manufacture is one of the most burning Csepel problems. It is certain that ending production cannot be the solution because need would have to be satisfied from import to take the place of the Csepel bicycles, and this is not possible. So the only solution is to make manufacture economical. There are enterprise efforts to take up unused capacity; this year, for example, they will manufacture 2,000 motors--which used to come from import--for garden hoes, thus decreasing the deficit of the enterprise. In the weeks ahead there will be a decision

about how the enterprise might work in the future, in what organizational form and with what financial conditions. But a longer time will be needed to work out a solution representing long range security.

#### Plans for Development

"Help yourself and the bank will help too!" In general this is how the future of the management of the Csepel enterprises might be summarized after the present financial adjustment. This adjustment ensures the present stability of the management of the factories but it will really mean aid only if the enterprises can deal with their internal problems of management, thus creating the conditions for meeting the ever stricter financial obligations of tomorrow and the day after tomorrow.

Those economic development programs about which the Csepel enterprise leaders spoke count on many types of possibilities. In the Iron and Steel Foundry, for example, where the radical reduction in orders caused a very big problem this year, they are planning to increase socialist export. In addition they are undertaking to partially process the castings, thus offering users more valuable products. Among the ideas are the development of pipe manufacture in the Iron Works, the manufacture of machine tools in the Machine Tool Factory which are now acquired from import and which are used by other domestic enterprises, and the organization of general repair of machine tools.

At the same time the enterprise programs are still rather uneven; the ideas of a number of enterprises are not sufficiently well founded. For example, the Machine Tool Factory is planning to increase production more slowly than would be desirable. The plans of the Individual Machine Factory do not ensure adequate utilization of very valuable equipment, which will slow development.

#### Learning Independence

It is a general problem that a decade ago the Csepel Iron and Metal Works employed 30,000 people; today only about 17,000 work at the Csepel enterprises. A part was played in this by the increase in productivity, the effect of the personnel shortage, the insufficiently marketable product structure and other factors as well, but at present there is significant unused capacity and even inadequately used buildings in the Csepel plants. And all this makes production much too expensive. A few ideas were voiced at the Csepel conference to make economical use of productive equipment. To give only one example, the very modern equipment built up in the Individual Machine Factory is outstandingly suitable for the manufacture and renewal of, for example, chemical industry equipment. And there are also very great possibilities in the development of the background industry, but for the present the enterprises are not yet dealing with such ideas.

Contributing to this to a large degree is the fact that personnel are declining at a swift pace in the Csepel enterprises. As in Hungarian industry in general, so at Csepel also a problem is caused by paying wages to workers

in a multiple shift or continuous work system. The majority of the enterprises are trying to exploit the wage increase possibilities deriving from a deliberate reduction in force or from various competitions, but working this out adequately is essentially a task for the months ahead.

So there are still problems in the management of the Csepel enterprises. But it must not be forgotten that they took the path of independent management only 5 months ago. Independence is not only a question of making a decision. There is need for much more initiative, a more enterprising spirit, a different sort of thinking, and this does not happen overnight. The results thus far are satisfactory, Lajos Faluvegi could state at the end of the conference. Realization of the resolution of the State Planning Committee is proceeding according to plan. The collective is working effectively. And in the end all this will provide a foundation for the level of management to improve at the Csepel enterprises in the years ahead.

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HUNGARY

BRIEFS

BANK PRESIDENT IN SWITZERLAND--Matyas Timar, president of the Hungarian National Bank, who took part in the conference for central bank presidents organized by the Bank for International Settlements [BIS] from 12 to 17 December in Basel, arrived back home on 17 December. He held talks with Dr Fritz Leuwiler, president of BIS and the Swiss National Bank, and Gunther Schleiminger, general manager of BIS. Matyas Timar paid a visit to the major commercial banking partners of the Hungarian National Bank and lectured about the Hungarian economic policy at a Zurich University meeting of economic and financial experts. [Text] [Budapest NEPSZABADSAG in Hungarian 18 Dec 83 p 9 AU]

CSO: 2500/135

UTILIZATION OF EEC EXPERIENCES BY CEMA

Warsaw POLITYKA in Polish No 47, 19 Nov 83 p 19

[Article by Tomasz Bartoszewicz: "CEMA-EEC; How to Utilize Integration Experiences"]

[Text] The European Economic Community and the Council of Mutual Economic Assistance represent two different integration models, which is understandable considering differences in socio-economic systems of their member countries. Even so, they have some features in common. Essentially, then, the EEC and CEMA are institutional superstructures of processes set off by the internationalization of economic activity, which in turn results from economic, research and technological changes in the latter half of the 20th century.

For various reasons, integration processes inside CEMA began some time after they had started in the EEC. It is no coincidence that the term "integration" itself first appeared in CEMA's vocabulary as late as in the 1970's. Despite adopting a so-called comprehensive socialist integration program in 1971, CEMA countries are now only looking for institutional patterns which might permit genuine multilateral economic cooperation. Experiences gained in our continent's western region should therefore be watched closely.

How To Rid Ourselves of Bilateralism?

One problem CEMA is facing is that economic cooperation between member countries still resembles a sum total of bilateral rather than multilateral relations. This particular state of affairs is chiefly due to the now binding procedure of concluding trade agreements and the current settlements system.

Trade between CEMA countries is based on long-term trade agreements individual countries sign with one another. The duration of such agreements usually coincides with their long-term socio-economic plan periods. Trade agreements are primarily specifications of deals that planning authorities of the countries concerned strike when coordinating their plans. Annual commodity exchange, in turn, is specified in trade protocols.

Plan coordination is undoubtedly necessary, because this enables CEMA countries to draw up long-term material-resources balances, among other things. However, since virtually all trade between member countries is based on plan coordination procedures, decision-making is overly centralized and individual foreign-trade firms are reduced to executors of agreements worked out at the central level.

As for the settlement system now in force in CEMA, it is, technically speaking, a multilateral device, because all settlements are drawn up in transfer rubles and must be recorded by the Moscow-based International Bank for Economic Cooperation. In actual practice, though, reliance on bilateral agreements and trade protocols in commodity exchange has prevented the transfer ruble from becoming the currency unit in multi-lateral settlements. All CEMA countries prefer to settle their turnover and accounts bilaterally. If, say, Bulgaria records a current-settlements surplus in trade with Romania, then it cannot assign that surplus to finance its possible deficit with Czechoslovakia without prior endorsement of such a deal by Romania and Czechoslovakia, as these would naturally be interested in such a mode of settlement.

In this situation, paradoxically, individual CEMA countries think less about ways of increasing exports to their partners than about what they can get from individual countries in return for their exports. Moreover, the CEMA settlement system's inadequacy compels member countries to balance not only their mutual turnover but even individual commodity groups. This is so because a transfer ruble gained from exports of machines and equipment is actually worth less than a transfer ruble earned for raw-material or food exports.

Now this has two consequences; on the one hand, bilateralism in trade is thus reinforced, and, on the other, member countries increasingly tend to settle some of their exchange deals in convertible currency; in return for your "convertible-currency coal" you can get "convertible-currency grain," for instance. The transfer ruble's multilateral role leaves much to be desired, because its actual value differs from country to country. This results from differences in prices, which, although set in keeping with common rules (what are called "rolling prices"), are agreed in bilateral contacts only.

So, the CEMA's trade organization system is certainly in need of significant modifications. In this connection let me recall rules for trade between EEC member countries. Initially (before 1958), a bilateral settlement system was also in force, individual currencies not being mutually convertible then. A first step toward dismantling barriers following from bilateralism came with the foundation of a European Payments Union and with the substitution of multilateral for bilateral clearings. This came in 1951 (several years before the EEC was called to life) and was introduced throughout Western Europe within the OEEC (Organization for European Economic Cooperation) framework. A next great step away from bilateralism was the gradual liberalization of trade (also within the

OEEC framework) by successively canceling turnover quota in trade protocols. Later, internal EEC trade was further liberalized by gradually lifting customs duties.

CEMA's current trade organization resembles in many ways the OEEC system, the difference being that the 1964 adoption of the transfer ruble as the settlement currency has failed to result in a multilateral clearance system because of the lack of progress in trade liberalization.

Full liberalization of trade between CEMA countries has not been achieved for a variety of reasons. Differences in economic development patterns force governments to draw up long-term plans for exports and imports of raw materials, fuels and basic components for production. Turnover, therefore, requires separate treatment. Yet there are no reasons why trade in other goods should not be liberalized gradually and conducted on a commercial basis.

This, however, requires that existing price-setting rules should be dropped and, on the other hand, that the settlement system should be altered. The point is to ensure that settlements should be genuinely multilateral in character. Instead of setting export prices in terms of rigid "rolling prices," CEMA countries should switch over to the "free prices" which are determined by supply and demand alone. Settlements could be made in separate units (perhaps in "hard-currency rubles"?), and surpluses could then be released for conversion into hard currency. This, of course, would require establishing a joint CEMA convertible-currency reserve.

#### Jointly Toward Outsiders

Experiences of CEMA countries, especially Poland's, clearly show that lack of coordination considerably disturbed balance in trade with third countries. Since every CEMA member country conducts its own autonomous policy in trade with third parties, it must bear all consequences of such a policy.

One particularly important matter is that a system should be worked out for jointly defending payments balances of individual CEMA countries. This requires a gradual creation of a joint convertible-currency reserve pool, which might be drawn from for short-term credits indispensable to meet external liabilities. Credits exceeding a member country's own contribution to this pool could be granted only under definite conditions, the way it is done in the EEC or in the IMF.

Cooperation in the area of accounts settlements with third countries requires that trade relations with these countries should be scrupulously coordinated. With time, this coordination could take the form of CEMA members striking common trade deals with third countries. One thing such agreements may solve is, for instance, admitting settlements in transfer rubles, which has been mentioned before.

### How Can Customs Duties Be Utilized?

Customs duties are among the chief integration instruments in the EEC. As is known, the EEC is basically a customs union, which involves complete abolition of duties in mutual turnover between member countries and establishing common external duty tariffs.

For various reasons, instituting a customs union of CEMA countries seems unfeasible in the foreseeable future. For one, there are considerable differences in foreign-trade organization between CEMA countries. What does seem possible to achieve is that customs duties inside CEMA could be abolished, especially since in cases where they are applied, it is mainly for the record.

This could be done by creating a customs-free trade organization as a special CEMA agency, which could include member countries ready to join such an undertaking (some CEMA countries, especially non-European ones, which strongly rely on customs duties for their revenues, may not wish to join). Such an organization would also be of great advantage in relations with third countries, say with the EEC, because, in keeping with GATT rules, such an organization would function as a free-trade zone.

However, imparting an active role to customs duties as an instrument of CEMA integration obviously requires coordinating customs policies pursued by individual member countries, which up to now have confined themselves to cooperate only in what is called non-trade turnover, which practically amounts to jointly fighting smugglers. As an absolute minimum, such a coordination should involve unified customs nomenclature, common treatment of the origin of goods admitted to customs-free turnover, and common customs statistics. With time it would become necessary to coordinate customs policies toward third countries.

CSO: 2600/385

POLAND

MACHINERY EXPORTS EXPECTED TO FALL IN 1983

LD132125 Warsaw PAP in English 2019 GMT 13 Nov 83

[Text] Warsaw, 13 Nov (PAP)--Poland's exports of engineering and metallurgical machines and equipment to capitalist countries will go down this year by some 800 million dollars compared with 1980. They are also to be lower compared with the last year.

The decrease in Polish exports results mainly from economic restrictions imposed on Poland by the U.S. and some Western states which strengthened their protectionism to limit Poland's access to Western markets. Long-lasting and heavy administrative procedures have been taken only against Polish exporters. Poland is to deliver extra documents, technological standards and requirements applied to Polish products have been raised in an unjustified way. [Sentence as received] Recently some 25 to 30 percent of Polish exports of metallurgical and engineering industries to the EEC countries were subject to various so-called extra-tariff barriers. This mainly applies to metals, steel, iron and steel, electric motors and equipment, and electronic industry products.

Poland's exports to the U.S. have gone down mainly due to the suspension of the most favoured nation status by the U.S. It resulted in an increase in tariffs for the majority of goods sold to that market. To maintain its exports Poland had to lower the prices of goods, which resulted in the decrease of hard currency revenues and lower profitability of the exports.

Poland suffered great losses at the beginning of 1982 when the authorities refused to unload Polish ships in American harbors. Agricultural planes, gliders, spare parts for planes and machine tools, that were to be delivered to American customers, either returned to Poland or were sent to the U.S. customers via Canadian ports, which considerably increased the cost of transport. The majority of institutionalized forms of cooperation have been suspended, as for example the activity of inter-governmental and inter-ministerial committees and working groups. This situation in a considerable way lowered turnover, as a great part of Polish products are exported under licence and cooperative agreements signed in the previous years and under long-term agreements and contracts for coproduction deliveries.

It is difficult to estimate losses caused by the U.S. restrictions, as they had and still have an influence on economic activity of metallurgical and engineering industries. They affect not only investment and production areas but also the volume of exports. As a result of the restriction the whole Polish society sustained many thousand million dollar losses which brought about the shortage of many goods on the market.

CSO: 2600/388

POLAND

SILESIAN ECONOMIC WOES ADDRESSED BY KATOWICE PROVINCE CHIEF

Katowice TRYBUNA ROBOTNICZA in Polish 7 Oct 83 pp 3,4

[Interview with the Katowice governor, Gen Div Roman Paszkowski, by Anna Jurkiewicz and Jolanta Matiakowska: "To Know and Understand Silesia..."]

[Excerpt] [Question] At the meetings of the government recently held with the public, there were words of criticism, often in a sharp tone, concerning the living conditions in Katowice Voivodship. The workers in the industrial plants, such as in Jastrzebie and Baildon, or the HMN Szopienice, speak of the troubles annoying them. They complain of the badly functioning transportation, crowds on buses, dry faucets in apartments, difficulties in placing children in nursery schools and of long lines in the housing cooperatives. Do you take this as a criticism of the government?

[Answer] The people are very right. Actually the living conditions in Katowice Voivodship are unusually difficult, along with the fact that many matters could be settled almost by hand. Here I refer to the example of Jastrzebie, where at the first meeting it really seemed that the government was soundly denounced, and in a sharp tone. When we went to Jastrzebie for the second time, the atmosphere was less heated already. Some matters had already been taken care of. We presented a concrete program of actions in the most important areas of public life. They concern the development of residential construction, protection of the environment, transportation, water supply and health service. The process of improving the situation in Jastrzebie will take a long time, because a great deal of neglect has piled up there. We believe that in this city, inhabited mainly by work forces from the mines and their families, the Ministry of Mining will cooperate in solving the vital human matters.

[Question] Then the meetings were very fruitful for Jastrzebie?

[Answer] For the government as well. We ascertained one very characteristic thing: the public is very involved in matters which concern them directly, and is a partner for us. In my opinion this is a very symptomatic sign of current times. In addition to the many bad points, recent years have had the good point of provoking public activity.

[Question] But don't you think, particularly in Silesia, where conflicts of nationwide interest occur because of the position of this region in the economy of Poland and because of local needs, that the government here is the first and often the only body against which the battering ram of turbulent public moods strikes?

[Answer] In recent times we have been observing a change in the relationship between the public and the government. There is no longer the bitterness, criticism for the sake of criticism, despite public inflexibility in fundamental matters. This is a very interesting point, because the people know what they want and are seeking understanding. This again testifies to the better work of the local administration, against which not so many attacks are aimed as formerly. However, this does not completely satisfy us. We are all aware of the extent of the needs of the Katowice Voivodship inhabitants and of the difficulties which their satisfaction meets. Specifically in Silesia there is a water shortage of 200,000 cubic meters per day. Every day more than 3 million passengers use the means of transportation, and here the urban transport network consists of one-third of the national line, while scarcely 13 percent of the rolling stock rolls here. In Katowice Voivodship there are 2,000 people per bus, while the national average is 1,300. Thus it is obvious that all norms of ecological security are exceeded, which, in connection with the high degree of urbanization, produces the most vexing living conditions in the country. No one can question this.

[Question] Just the opposite, in June last year the Council of Ministers adopted a resolution on the proper functioning and further development of Katowice Voivodship. It crowned the efforts of the voivodship party and administrative authorities of the region for principles of forming an industrial agglomeration in agreement with the public need. This was the first government document which established a preference for a nonproduction investment. Unfortunately, the 3-year plan passed by the Sejm contemplated only the construction of the Dzieckowice group waterlines. As a bad aftermath, it is already known today that this is threatened by a 4-year delay...

[Answer] ...Not a 4-year delay, but a 2-year delay. The most important fact is that the investment has started. I consider this a great achievement. As far as the resolution itself is concerned, if it were completely realized it would certainly have historical significance for Silesia.

[Question] Unfortunately, the 3-year plan established by the Sejm shows that neither a cross-town route nor a Regional Railway Movement will be built in the coming years. Both of these investments were written into the government resolution of last year. The inhabitants of Katowice Voivodship make this comment: There are funds for the Warsaw subway and for a rapid transit system in Poznan, but as usual there is no investment money for Silesia.

[Answer] This is really an unpleasant matter for this region. We also take it this way. But since the two tracks and the section of road from Katowice

to Gliwice were not included in the 3-year plan, we have tried very hard to get them written into the list of anticipated investments. Nothing came of this, although the Planning Commission had promised us such an entry. If the promises were kept, there would be hope that, as the economic situation or certain financial margins improved, a chance would develop for these two investments of fundamental importance for speeding up transportation in Silesia. Despite everything we have not become reconciled to this decision. We are still intervening on the control level, convinced of the correctness of our reasons.

[Question] This is one more proof that Silesia--according to public opinion--which gives so much to the economy, has what it properly deserves taken away. Does the government also accept this?

[Answer] I even sense that Silesia lives with a feeling of discrimination. Industry "grew fat," people were lacking, and they were attracted from all of Poland, with the lure being wages and apartments. In the past decade 75 percent of the apartments have been allotted to production plants or to those coming from outside. Up to this very day the local inhabitants have apartments in the worst districts in rough quarters without the basic facilities. The rest of Poland is convinced that life is good here and that there is an abundance of everything.

[Question] Did you also come to Silesia with this conviction, Governor?

[Answer] I knew Silesia superficially. Like the majority of Poles, I did not realize the difficult living conditions existing here, because in passing through the city in an automobile we are impressed by the many new developments, the many chimneys and the heavy traffic. Only by living here can you realize how deceiving appearances are. Based on the "showing" of Silesian affairs, a wrong opinion about this region is still circulating, and therefore a great deal of effort will certainly be necessary for even the smallest thing. It is not possible to overcome all of the myths and legends circulated about Silesia in the 1970's. No one suffers here from megalomania and no one says that Silesia is the best or the richest, while on the other hand we are doing everything we can to inform the country of the bitter truth about this region. But this will be a long-term process.

[Question] At the moment life in Silesia is proceeding according to the old patterns. Several new mines are being built and the coking plants in the Katowice metalworks are in operation, but there is hardly a sound about modernizing the old type of metallurgy...

[Answer] We shall not abandon the development of mining in Silesia, since nature has endowed it so abundantly with this wealth. The mines must be built where the coal is. In many old mines the seams are coming to an end and new deposits must be found. We do not have any other source of power, and must depend on coal. However, the important thing is wisely to reconcile economic interest with public ones. The currently planned session of the

Voivodship People's Council, devoted to matters of mining development in Katowice Voivodship, is aiming in this direction in the broadest possible meaning of this question.

[Question] Is this the famous session which was planned a year ago?

[Answer] I sense something between the lines of this question. It is said that the session took so long to materialize because of a lack of understanding between the ministry and the Voivodship Office. There is nothing to this. Let us not oversimplify extremely complicated matters. Let me again repeat that mining must be developed in Silesia because that is where the coal is. In common with the ministry we have really tried for many months to find a way of reconciling its use with protection of the territory.

We are in mutual agreement. It is only a matter of the costs of coal extraction, not burdening Katowice Voivodship inhabitants alone. This will be the interpretation of the coming meeting of the Voivodship People's Council, at which the joint position of the councilors, as representatives of the public, the ministry and the Voivodship Office, will be presented.

[Question] Here the question arises as to whether there will be a guarantee of an intelligent development of mining or will there be some kind of change in the way the central authorities look at the problems of the Katowice Voivodship. These doubts appear justified, because public opinion more and more often reveals the attitude that the "top" does not understand us or finds it more convenient not to. How is this in reality?

[Answer] In my opinion, the fact is that the prime minister really understands us. I hold this conviction on the basis of a talk with Gen Jaruzelski. We also understand one another on the level of management of individual ministries, but the hardest thing is to "be represented" by the averages, the working ministerial links, which prepare the decisive documents. What is worse is the continuing conviction there that Silesia is rolling in wealth. It seems to me that particularly the social activists in this voivodship should fight to change these deeply rooted stereotypes. I personally see wide fields for activity, for the deputies and for the members of the Central Committee, as well as for journalists. I sometimes reflect on the mechanisms by which propaganda functions. In the 1970's, when the industrial successes were constantly emphasized, television and the central press were full of Silesia. Now, on the contrary, when we would like the country to be aware of the real conditions, the Television News camera "passes" mostly through the central Katowice streets, showing in every possible way the monument to the Silesian Insurgents. At the same time who in Poland has heard of Knurow, who fell 15 meters as a result of mining activity, or of Chorzow Bator, where the boundary between the metalworks and the town was lost, or of Ruda Silesia, where life still goes on below the Pokoj Metalworks in rude quarters, more exemplary of the past and not to be expected by us today?

[Question] To put it briefly, we believe that the Voivodship People's Council in the future will avert the Knurow situation, especially in Bytom, which is still known in the country as a synonym for mining disasters. But, after all, the problems of Silesia begin, but do not end, with the coal industry. It could be discussed whether metallurgy, especially the old type, is not more burdensome for the people living here. Here only the extreme catchwords of Concordia and of the Katowice metalworks coking installation suffice.

[Answer] Let us touch on some very sensitive points. On the one hand the lack of consistency in modernizing the outdated metallurgical plant and, on the other, the unfulfilled hopes placed on modern foundry investments. Actually, Concordia will be closed by the end of this year...

[Question] ...Not the first, unfortunately...

[Answer] Agreed, but what is to be done? A decision on this matter is exceptionally difficult. Close a plant? Profound public reasons favor this. Life in the vicinity of Concordia is really a nightmare. Katowice Voivodship anticipated its closing as early as 1979 with the date of liquidation at the end of 1981. A modern coking plant at Opolszczyzna was to take over production. And the community there is not accepting this investment enthusiastically. Katowice Voivodship cannot rescind its decision. It has an obligation to the public, to the Voivodship People's Council and to the PZPR City Committee Plenum in Zabrze inhabitants to eliminate the coking plant by the end of the current year.

[Question] It is obvious that no one today wants production investments which entail a threat to the natural environment. After all, the same thing applies to the Katowice Metalworks coking plant. Will it or will it not be?

[Answer] I can again repeat the same argument. Coke is necessary for the country. Since we have built this large metalworks and spent many billions on it, we must be consistent. The coking plant must be built, but very wisely, beginning with documentation. It must be a plant as modern as any existing in the world.

[Question] In view of the unfortunately smoking Katowice metalworks, is it really possible that such burdens can be eliminated in the case of coking plants?

[Answer] The voivodship authorities in Katowice have levied very strict requirements on this investment. The costs of the newly constructed coking plant must include investments not realized in the first phase of construction of the plant. This refers to supplying the plant with water, managing production wastes and to the technical infrastructure conditioning the building of more apartments for plant workers. Well conceived public interests support this. We must eliminate errors committed in the past, experienced by the Katowice plant work force. Katowice Voivodship will not

take on itself the burden of this construction, because it would again have to be at the expense of the inhabitants of this region. This is a central investment with all of its consequences.

[Question] Let us refer to the statement that the metalworks' problems and its modernization are suspended....

[Answer] Here I would like to stress that the Voivodship People's Council session devoted to mining will open a whole cycle of similar meetings which will outline the directions of development of the other key production branches. After mining, we shall put metallurgy on the workbench. We must confront the needs of the individual branches of production with the possibilities of Katowice Voivodship and eliminate what remains of the past. Individual ministries have been directed by their own interests and have not considered the ecological maintenance of the region nor the labor supply. These were reciprocal limitations and, for example, involved the workers.

[Question] It seems that this threat still exists in view of the tremendous labor shortage. Where will industry, and especially mining, get people from? For years they have counted on people from outside, luring them mainly with apartments. This argument is failing.

[Answer] Actually every new mine must employ several thousand people. There is no talk today of bringing in workers from outside. In 3 years we shall hardly build 60,000 apartments. Mining must make do solely with local workers.

[Question] In view of this is there no fear that employment in mining will be at the cost of other branches? This is even more the case because this ministry generally finds "arguments" annoying to the people.

[Answer] Most necessary in Katowice Voivodship is labor in mining and in services. These should be two protected groups, especially now when we fully realize our labor shortage. Other solutions should be sought in the future. Here I have deglomeration in mind.

[Question] This is a motto which has been repeated for very many years and is treated as a cure for all troubles, but does not find any confirmation in practice.

[Answer] After all, we cannot take deglomeration in a simplified way, such as by flying a helicopter, lifting the plant and putting it someplace else in the country. There must be a clearly specific program based on the application of industrial development to local conditions. The government should determine which plants will still be developed, those whose production has already reached the ultimate ceiling and cannot be expanded any more, and which should be assigned to gradual liquidation after total technological exhaustion.

POLAND

CURRENT AGRICULTURAL, FOOD SITUATION SUMMARIZED

Warsaw KURIER POLSKI in Polish 21 Nov 83 pp 1, 2

[Article by (DAg): "Farming Moves Towards Factories and Granaries. Future Crops Already Grow. Raw Materials for Processing Are Available. Less Slaughter Cattle, More Poultry"]

[Text] We should now wish for the farmers that there be more rain and, even better, snow that would melt gradually and water the soil into deeper levels. Fall rains have indeed raised the soil moisture content, but this was not enough after the dry summer that we had. The winter crops are thus far not in bad shape. The light frost and snow are only beneficial, but without proper amounts of water through the winter we will not have a good harvest.

The sowing of winter grain crops is practically finished. Of the 4.8 million ha planned, almost all have been sown. A much larger area has been sowed with rape: 420,000 ha as compared with 230,000 last year, although then all crops sprouted, and the harvest was good. On rape fields this year, sprouts failed to appear where no rain fell. For instance, in Ciechanow Province.

An earlier than usual onset of winter, which came in November, prevented plowing some areas from being completed. It is not too late, however. With a minimal frost one can plow very well, especially after snow melts. If slightly frozen earth pellets stay throughout the winter, it is only better.

With the ongoing discussions over the prices for food products, one inevitably returns time and again to the issues of food economy, agriculture, the situation in produce procurement and in the food industries. The food procurement year has ended. We know how much we have in the cellars and what the prospects are for the consumer market.

Grains that have already been received at the warehouses from procurement now comprise 76 percent more than about this time a year ago. Eventually, 4.8-5 million tons will be received, and 4.4 million is in already. However, we can not do without imports. Direct consumption alone requires 6 million tons of grain. We will buy abroad about 3 million tons, including about 1 million tons of fodder grain, mainly corn, to be bought in socialist countries, as well as fodder wheat.

After broiler feeding plants were eventually provided with fodder and put into operation, the procurement of poultry since October 1983 has risen drastically. The rise is dramatic when compared with last year--the growth is 156.7 percent, and the number of chickens will grow even more.

This is a good support to the overall meat procurement, because it offsets, in the overall balance, the decline of procurement of other kinds of meat. The hog procurement is 18 percent below last year's figure (comparative data for October 1982 and October 1983). Likewise, the amount of beef is 11 percent lower. Altogether, for the 10 months of 1983, meat procurement is 3.6 percent below the past year's level. Fortunately, we have managed to stop the down trend in livestock breeding. But the positive results will not be felt by the market before a certain period of time.

Milk procurement has been declining. The October figure is 9 percent below that for September. Compared to the best summer indicators, it is lower by one-fifth.

We are procuring less eggs than we were a year ago, although there is and will be enough of them in the stores. The comparisons for two years show that, during the 10 months of 1983, procurement dropped 7.3 percent, but in October it was lower than in September by 10 percent.

Yet, supplies generally are sufficient, and, in the vicinity of farms, even good.

By November 6, 1983, the stores and potato processing industry have received already 1.5 million tons of potatoes, that is, 30 percent more than a year ago. The prices are lower, although crop harvest was not particularly outstanding. This is an effect of consistent price policies. At last, the potato processing industry has enough raw material (1.1 million tons compared to hardly 0.5 million tons a year ago), which means that finally we will have starch. Trade agencies report that they have sufficient supplies of food potatoes. Sugar mills also have enough raw materials, 8.6 percent more than in 1982. Hopefully, the frost will not spoil the beets not yet processed, because the harvesting will continue probably into mid-January.

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CSO: 2600/386

POLAND

FAVORABLE GRAIN RESULTS MEAN LESS GRAIN IMPORTS

AU081410 Warsaw TRYBUNA LUDU in Polish 2 Nov 83 p 2

[Text] PAP--The minimum grain needs of the baking, food, brewing, and fodder industries during the economic year 1983-84 will amount to 9,360 metric tons, including 8,480 tons to cover processing needs and the production of protein fodder up to June 1984, and over 880,000 metric tons as essential stocks until next year's harvest.

At first, it was planned to meet only half of the above grain needs from domestic sources, with the estimate that grain procurement would not exceed 3.5 million metric tons in the case of grain for consumption purposes and 0.5 million metric tons in the case of grain for sowing purposes. However, the weather for plant production proved better than expected, with the result that this year's harvest has been about 1 million metric tons greater than last year's, amounting to almost 22 million metric tons. At the same time, there have been more favorable procurement prices for agricultural produce, grain as well, as of 1 July, which have encouraged farmers to sell more grain to the state, grain which was kept at the farms during previous years when procurement prices were less favorable.

As a result of the better harvest and the more favorable procurement prices, it has become possible to meet the demand for grain from domestic sources to a considerably greater extent and at the same time to reduce costly imports of grain. Judging from the present procurement of grain, it is estimated that farmers will supply the state with no less than 4.5 million metric tons of grain for consumption purposes and 0.5 million tons of grain for sowing purposes from this year's harvest.

Regardless of the increased procurement of grain to meet the needs of the baking and brewing industries and the reduced imports thereof, the Ministry of Agriculture and the Food Economy believes that the right conditions have come about to increase the number of farm animals next year. For it is planned to supply agriculture with about 4 million metric tons of fodder, which is 0.5 million metric tons more than during the previous economic year. So it is estimated that the total amount of protein fodder supplied by the state and possessed by farms will be 18,740,000 metric tons, which is about 90,000 metric tons more than last year when the number of farm animals was considerably lower.

In the opinion of the ministry, such fodder reserves should encourage the trend to increase the number of farm animals.

CSO: 2600/389

INDUSTRY WEEKLY URGES STRONGER ACTION IN SUPPORT OF HOMEBUILDING GOALS

Warsaw FUNDAMENTY in Polish No 46, 17 Nov 83 p 2

/Editorial Commentary: "But the Dangers Are Growing" /

/Text/ There is no doubt that everyone has to be embarrassed when there is the need to repeat an obvious and well-known issue. But life is brutal and sometimes there are situations when a reminder about basic issues is necessary. For example, the building trade is a complicated process over time and if we want to achieve the final effect, we should firstly prepare a plan, find an area, develop a tract of land and so forth.

Last week we wrote here that because of a lack of materials, especially finished materials, some voivodships are threatened with nondelivery of the anticipated number of apartments. We also are raising the alarm that if these deliveries are not made, then the implementation planned for next year--an increase of 10 percent over this year--will not be achieved (although this is only a drop in the bucket with respect to needs).

At the last meeting of the Sejm's Commission on Construction and the Construction Materials Industry, a great deal of attention was paid to this threat. Among others, the alarming situation existing in the individual building trade was cited. The plan called for 65,000 new apartments, but in the 9-month period only 29,900 were made ready for occupancy. Today we can say that the plan will not be realized. If we look already to next year and years ahead, we can see that by the end of September there were only 152,500 apartments (in highrise apartment buildings), which means 10 percent fewer than last year. Based upon readings of the daily press, it appears that building construction has had a hard time, and in some places like Poznan and Lodz it is known already that three-fourths of all new apartment construction that was supposed to be ready next year will have to be completed in 1 year. What this means does not have to be explained to someone in the building trade. And what will be the case in the next few years?

During the Sejm commission meeting, there were attempts to answer the question about difficulties disrupting the rhythmic flow of the building trade process and their effect on the implementation of plans, which are indeed modest in comparison to needs.

Above all, it is necessary to acknowledge the shortage of materials. It has been known for a long time that a lack of steel components has hampered housing construction, causing it to be unrhythmic and inefficient. And if it is not possible otherwise, the workers are joining different steel elements, which contributes to its general deficit. But still there is a shortage of prefabricated pieces for assembly. The shortage of drainage pipes has delayed the process of starting new subdivisions.

At a very recent meeting of directors of voivodship construction branches, it was stated flat out that if an "apartment" does not get a guarantee for required materials, then there will be a regression in progress for plan implementation.

Members of the Sejm commission echoed these words. They demanded that construction of multi- and single-family homes should be given the required guarantees for materials. This demand no doubt is necessary and correct. Only one question remains--what has to be done to ensure that the demand becomes a reality?

However, just as dangerous and maybe even more dangerous than the shortage of materials are the bureaucratic barriers to the building trades.

A fatal example of this aspect are the authorities in the capital megalopolis. The plan to incorporate the suburbs into the capital is still foggy and specialists behind their desks are doing everything possible to avoid making a decision.

Take Choszczowka--the new residential complex north of Warsaw--as an example. The Teacher Housing Cooperative is supposed to build 3,700 apartments on this beautiful 114-hectare site. The investor went to work at a cost of several million zlotys and designed two possible urban concepts. These concepts were submitted to the urban authorities in the capital. And nothing has happened! There is no decision. And after all the complex is going to be built on virgin land, so development of this land should be given the go-ahead.

At the last plenum of Warsaw party organization, it was stated how scandalous it is that bureaucratic barriers set by the Warsaw magistrate are harming the building trade. At the beginning of this year, the mayor of Warsaw stated in a press interview that we cannot afford to build too many apartments when there is a wide development of individual housing. At present, the situation has changed a little so that single-family homes cannot be divided, because it is difficult to anticipate what will become of them.

This issue does not concern only Warsaw. Alarming stories of this kind emanate from the entire country.

It is very clear that now and in the future the building trade, and especially the individual building trade--an important element to come out of the crisis--is in danger not only from objective difficulties but also from the reprehensible slowness of bureaucrats.

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CSO: 2600/331

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